Andover Continuum™ Product Catalogue

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t.a.c® by Schneider Electric

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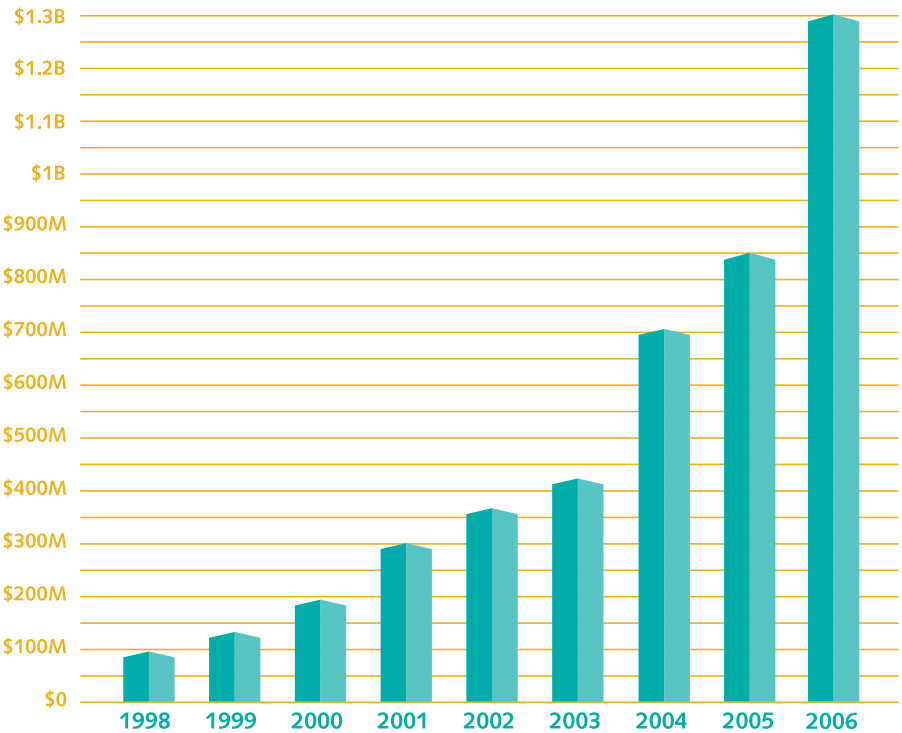
About TAC

Open Integrated Systems for Building IT™

Global Leader in Building IT

TAC is a leading provider of building automation solutions based on Open Integrated Systems for Building IT. TAC's mission is to provide added value through building environment services for indoor climate, security and use of energy, delivered with advanced technology to end users and property owners throughout the world. With over 80 years of experience in the HVAC, building automation and security arenas, TAC employs more than 5,000 people worldwide, with partners and branches in 80 countries. TAC's parent company, Schneider Electric, is the world leader in automation and electricity management, with over 112,000 employees worldwide and operations in 190 countries.

TAC is the fastest-growing, most innovative company in the building automation industry. We are at the forefront of growth because we deliver what our customers want, year after year, building after building.



WHAT MAKES TAC THE LEADER

- Fastest-growing, most innovative in the industry
- Delivering 'customer for life' services and benefits
- Taking open, integrated systems to a new level
- Technical and market leadership
- World-class market representation

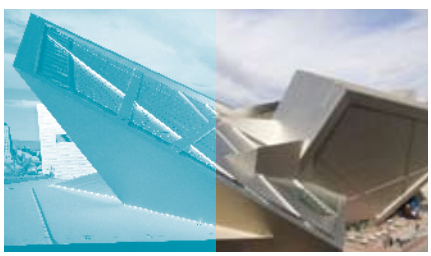


Photo by Kevin Hester
COURTESY OF THE DENVER ART MUSEUM

THE ADVANTAGES OF OPEN INTEGRATED SYSTEMS FOR BUILDING IT

Our open, standard technology enables you to integrate heating and cooling, access control, security monitoring, ventilation, fire and smoke control and lighting, across your enterprise.

This approach reduces training and maintenance costs, increases energy savings, and adds value by collecting and sharing vast amounts of pertinent facility and financial data, which helps you run a more profitable building. You have full control of an entire building – or multiple buildings, or each room in each building – from a single user interface.

Better control translates directly into such benefits as savings, flexibility, security, reduced expenses, more attractive properties and user-friendly operation. Even employee productivity improves, because people feel and function better as a direct result of improved indoor climate.

Open systems also provide the freedom to create new innovative solutions. Because we use standard, non proprietary technology such as TCP/IP, LonWorks®, BACnet® and Ethernet, our solutions are compatible with virtually all systems on the market, and can fully integrate on one network. This gives you more options and prevents you from being locked in with any one vendor's technology.

SUPPORT AND ENERGY OPTIMIZATION

We are committed to supporting our customers' facilities and to ensuring optimum energy performance throughout the entire life-cycle of their buildings. We offer a comprehensive range of vital monitoring, energy efficiency and support services tailored to your specific operational needs, including:

- A full array of performance contracting services
- Energy efficiency programmes that address all aspects of energy use
- 24/7 telephone support and remote management services
- Low cost and no cost energy conservation measures
- Comprehensive user training
- Technical help desk
- Software upgrades and migration paths
- Adjustment and optimisation of installed systems
- Regular inspection and function testing
- Call-out maintenance

HOW WE DELIVER OUR SOLUTIONS

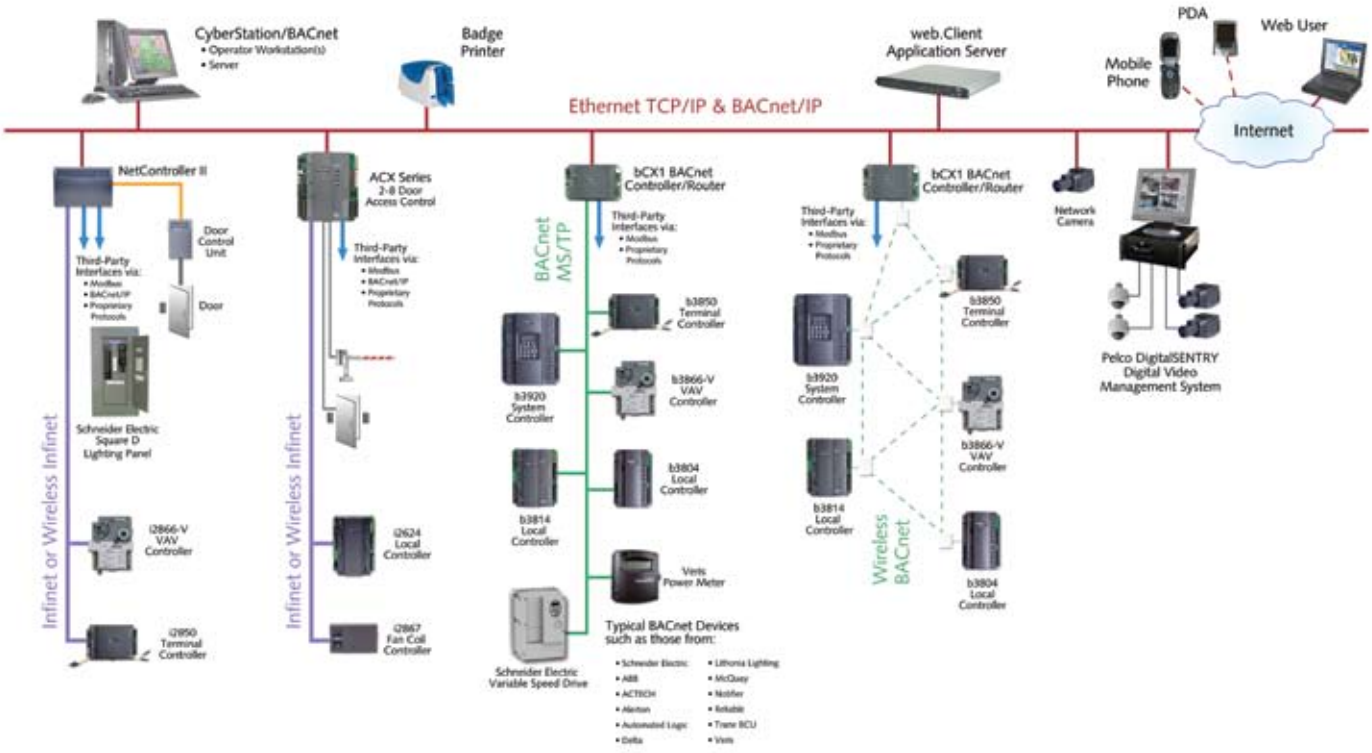
We deliver solutions through a world-class organization that covers all continents. We are proud to claim premier systems integrators as our partners to market. Along with our branch offices, they deliver solutions throughout the world, tailored to the needs of each facility, region and industry.

Notes

System Overview

Integrated Solutions Enabled by Open Systems for Building IT®

Andover Continuum System Architecture



Expect More from Building Automation and Security Systems

Today's buildings demand more from building automation and security systems. Buildings must adapt to many rapid changes, and be smarter, more comfortable, more efficient and safer than facilities designed just a few years ago. The controls system is the critical component in meeting these new demands, and the Andover Continuum system from TAC is ready for today's needs, while helping prepare for the future.

DESIGNED FOR CHANGE

TAC's Andover Continuum is designed for change. We've placed an emphasis on scalability, flexibility, versatility and programmability throughout the entire product line. We are constantly asking our engineers to solve the "what if the customer wants to…" problems, so our products have the widest range of practical uses, from HVAC control to basic monitoring, from electronic access control to surveillance.

THE INTEGRATED APPROACH

Andover Continuum is built from the ground up as both a climate control system and a security system. This unique approach reduces the overall system cost, while providing a solution for the growing requirement for tight integration using coordinated control strategies. It is further complemented by TAC's commitment to open standards, allowing the system to interoperate with third party systems for total building and system integration.

SCALABLE AND EXPANDABLE

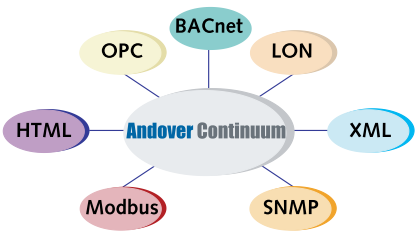
From a single site to global enterprise, an Andover Continuum system installed today provides as solid a foundation as the building it serves. TAC stands behind Andover Continuum and the investment in building technology by making new products backward compatible. This, along with the scalability and expandability of the Andover Continuum system, provides a seamless path for integrating past, present, and future facility management needs.

Open and Integrated Solutions

A TRACK RECORD OF INNOVATION

Andover Continuum was the first to integrate HVAC and Electronic Access Control into one controller, and the first to offer controllers with onboard Ethernet communications and an embedded web server. It was also the first system to integrate access control and digital video recording, and the first native BACnet™ system to also handle full security management tasks.

Andover Continuum expands the possibilities again with the world's first wireless-mesh field bus, compatible with the full line of Andover Continuum Infinet™ and BACnet field controllers.



INTEROPERABILITY

Building managers are challenged to integrate multiple systems from different companies. A comprehensive, integrated solution must work in tandem with the latest open protocol standards, yet work with any installed base of legacy systems, which use a wide variety of proprietary protocols.

Through interfaces with other manufacturers' systems, Andover Continuum can talk to the entire building and share information among systems including chillers, fire alarm panels, air handlers, CCTV systems, lighting controllers, and more.

If a facility uses a product without an open standard to communicate, Andover Continuum has a list of over 200 third party communication drivers, which include many proprietary protocols.

TAC embraces BACnet, an open ASHRAE/ANSI/ISO standard providing the opportunity for building automation systems to interoperate with one another. The Andover Continuum system takes full advantage of BACnet's data sharing, trending, scheduling, alarming, and device management services. From the BACnet operator's workstation, to the building controller, to the simplest terminal controller, Andover Continuum provides the highest level of interoperability at every level.

Andover Continuum is IT-friendly, supporting major communication, desktop IT, and building automation standards such as email, SNMP, HTML, Active-X, and XML through TCP/IP, OPC, LonWorks®, BACnet, and Ethernet.

A SINGLE SOLUTION FOR HVAC AND SECURITY

Andover Continuum achieves tight integration cost-effectively. It is an HVAC system and a security management system at the same time, with several products offering both access control and HVAC control. There's no duplication of hardware and wiring as with separate systems, thanks to the efficiency of Andover Continuum design.

The same programming language is used for both HVAC and security applications, so coordinated system strategies are simple to implement. Andover Continuum is natively loaded with open protocol support, enabling it to work with many other vendors' products and information systems.

Andover Continuum also allows use of the same hardware and software for small or large systems. Buy only what is needed now, and expand later.

Andover Continuum Delivers More

Andover Continuum is a full system of controllers and user interface software products, which can be combined in many different ways to customize the system to site requirements. Whether the site is a single building or across multiple locations, Andover Continuum is scalable and adaptable. It can even be tailored for specialized environments. For example, in the highly regulated life-sciences industry, the system can be installed and validated to support compliance with FDA regulations.

INTERFACES FOR ALL USERS

From the facility manager and building owner, to the department manager or receptionist, a diverse group of people need to access the system for a variety of functions, using a wide range of user interfaces:

- Fixed workstations – PCs, laptops
- Web browsers – PCs, laptops, PDAs, mobile phones
- Service tools – laptops, PDAs
- Wall displays – touch screens, keypads with displays

USER INTERACTION

- View a graphic
- View and acknowledge alarms
- Modify schedules
- Run a report
- Change a setpoint
- View a trend graph
- View video
- Edit personnel records
- Create badges
- Edit programs

FULLY POWERED NETWORK CONTROLLERS

Andover Continuum's Ethernet-based network controllers are the most powerful in the industry and go far beyond basic routing to field buses. They also act as programmable controllers, web servers, open and proprietary protocol gateways, and alarm and event distribution engines, as well as SNMP, OPC, and email servers.

INTELLIGENT AND RELIABLE FIELD CONTROLLERS

A facility is affected by the reliability of the control system. That's why TAC has distributed intelligence down to the local device level of every controller. These peer-to-peer devices provide stand-alone control, running their own programmes, schedules, and trends, and issuing their own alarms and events. When connected to an Andover Continuum system via a field bus network, they can globally share data with any controller on the network. This global point addressing capability allows for coordinated control and reduces overall installation costs.

BACnet OPTION AT EVERY LEVEL

Andover Continuum is designed to support BACnet at every level from the fixed workstation to the network controller to the field controller, with no need for a gateway. Continuum supports the most advanced BACnet services, addressing all five interoperability areas: data sharing, scheduling, trending, alarming, and device management. Since TAC has listed every BACnet controller in the Andover Continuum system with the BACnet Testing Laboratories (BTL), they are compliant with the ASHRAE standard and interoperate with third party BACnet devices.

WIRELESS FREEDOM THAT'S ALWAYS ONLINE

There's no sacrificing reliability to go wireless. Wireless field networks are auto-forming and self-healing, solving the challenges and expense of running miles of wire to network field controls. A simple wireless adapter can be used with most of the Andover Continuum field controllers including all Andover Continuum BACnet field controllers.

With Andover Continuum more can be expected from a building automation and security system. It is modular, adapts easily to rapid changes, and allows building systems to cooperate with each other. It sets the standard for comfort and occupant safety and bridges past, present, and future with backward compatibility and compliance with open standards.

Software

Photo by Kevin Hester
COURTESY OF THE DENVER ART MUSEUM

Continuum CyberStation **Single & Multi-User**

The Andover Continuum CyberStation™ workstation software is a Microsoft® Windows®-based, colour graphic user interface. Continuum's software provides powerful features and timesaving tools to control and monitor your Andover Continuum intelligent building system over a high-speed Ethernet LAN/WAN or single-user network.

Single-User

The Single User (SU) version consists of a PC running Windows Workstation. The CyberStation software CD will install an MSDE database and the Andover Continuum software. The Andover Continuum front-end is the focal point for running your building. From a single Andover Continuum workstation, you can centrally manage as one seamless system the vast amounts of information your building generates each day. Andover Continuum presents information to the operator using a graphical menu system and dynamic colour graphic screens to paint a picture of conditions throughout your facility. View and acknowledge alarms; track personnel; open and close controlled doors; adjust setpoints; turn lighting and equipment on and off; run reports; modify schedules; and access pop-up windows of live trend data and event logs.

Additional Workstations for Single-User

Small systems, up to 3 workstations maximum, can now operate without the need for a file server (CyberStation version 1.5 and greater), by utilising the Single-user MSDE database. The minimum system configuration would be 1x SU (Programmer's edition) + 1 or 2 x LAN. The SU system will replace the file server, and its MSDE database will be shared between the maximum 3 workstations.

The maximum allowable database size for SU systems is 2GB. If the database size becomes greater, an upgrade to a multi-user system with a file server is required.

Multi-User

Within a multi-user system, the Andover Continuum front end stores all your facility data, alarms, energy usage, building performance, maintenance records, personnel records, and time-and-attendance logs – in a single Microsoft ODBC-compliant SQL database. SQL is an industry-standard for databases, which means Continuum can also share information with your company's existing information systems and networks.

All of this information is protected from unauthorised access through a sophisticated, yet simple, user-configurable "key" system. Individual keys unlock different portions of the software – for example, classes of objects, actions performed by an operator, and access to individual objects. The system administrator assigns each operator a "virtual key chain", or access privileges, to these various portions of the software.

The Andover Continuum workstation consists of a series of applications that interact seamlessly and appear transparent to the user. OLE (object linking and embedding) automation provides in-place access to applications such as Microsoft Word™ or Excel™, Netscape Navigator™, and Visio™. In addition, Continuum's numerous application editors and configuration wizards make setting up your system easy.

CyberStation/BACnet Operator Workstation

The Andover Continuum CyberStation Operator Workstation software includes native BACnet® functionality. Take control of your entire facility through a single workstation platform. Along with BACnet, CyberStation also supports full, simultaneous compatibility to all Continuum controllers, including HVAC controllers, security / card access controllers, lighting controllers, as well as third party systems. CyberStation also integrates seamlessly with digital video recorders from Integral Technologies, allowing live video feeds from any camera to be placed within a BACnet graphical environment.

CyberStation runs on the Microsoft Windows XP® platform, and employs either a Microsoft MSDE or SQL database. Configurations range from a single PC to multiple workstations with a central file server.

- *Native BACnet Operator Workstation*
- *Consolidate Multiple Systems and Vendors Under One Interoperable System*
- *Manage HVAC, Security, Card Access, Lighting, and Power Systems from a Single Workstation*
- *Web-Based Interface for Easy Access Anywhere*
- *Crisp Dynamic Graphic Displays for Quick Troubleshooting*
- *Fully Compatible with all Andover Continuum Controllers*
- *Add Digital Video Surveillance to Any Graphic Display*
- *BACnet Autodiscovery Reduces Setup Time*

Continuum CyberStation **Single User & LAN Workstation**

Continuum Single User Software (includes MSDE database)

1000 I/O Points — **SU-HV-P-USB**
HVAC Programmer's Edition

1000 I/O Points (5,000 Personnel Records for Security) — **SU-SEC-P-USB**
Security Programmer's Edition

1000 I/O Points (5,000 Personnel Records for Security) — **SU-INT-P-USB**
Integrated Programmer's Edition

Unlimited I/O Points (4 Million Points) — **SU-HV-U-P-USB**
HVAC Programmer's Edition

Unlimited I/O Points (4 Million Personnel Records for Security) — **SU-SEC-U-P-USB**
Security Programmer's Edition

Unlimited I/O Points (4 Million Personnel Records for Security) — **SU-INT-U-P-USB**
Integrated Programmer's Edition

Continuum LAN Software

1000 I/O Points — **LAN-HV-P-USB**
HVAC Programmer's Edition

1000 I/O Points (10,000 Personnel Records for Security) — **LAN-SEC-P-USB**
Security Programmer's Edition

1000 I/O Points (10,000 Personnel Records for Security) — **LAN-INT-P-USB**
Integrated Programmer's Edition

Unlimited I/O Points (4 Million Points) — **LAN-HV-U-P-USB**
HVAC Programmer's Edition

Unlimited I/O Points (4 Million Personnel Records for Security) — **LAN-SEC-U-P-USB**
Security Programmer's Edition

Unlimited I/O Points (4 Million Personnel Records for Security) — **LAN-INT-U-P-USB**
Integrated Programmer's Edition

Andover Continuum CyberStation Options	
-B	Add photo ID Badging features to any SU-INT or SU-SEC package
-C*	Add -C for Critical Security (valid only for -SEC or -INT)
-D*	Add -Data Exchange, e.g. LDAP (valid only for -SEC or -INT)

**available on versions 1.8 or greater only*

For single user versions only the relevant part number for web client options (1 or 2 users) should be added to the CyberStation part number, e.g.:

SU-HV-P-WC1PRO-USB

SU-INT-U-P-WC2PM-USB

web.Client™

TAC's web.Client™ software allows authorised users to access their Continuum building management system from any PC on the network or over the Internet via a web browser. It provides major benefits for integrated facility management systems. The authorised user can modify room temperatures, manage card access, view camera video, acknowledge alarms or adjust an occupancy schedule without the need for dedicated workstations throughout the premises.

To guarantee the integrity of the system, web.Client is password protected. The software is designed so each user can log on quickly, view only the information they are authorised to see and amend only the parameters they are allowed to change.

- *Instant accessibility to the system*
- *Delegate control and security decisions locally*
- *An intuitive interface, partitioned for tight security*
- *Pre-configured, an easy addition to existing Continuum systems*

Features	web.Client Pro	web.Client PM
Graphics	✓	
Schedules	✓	✓
Groups	✓	
Live Alarm View	✓	
Live Event View	✓	
Explorer/Point Editor	✓	
Personnel Editor	✓	✓
Access Reports	✓	✓
Digital Video - View Live & Recorded	✓	

Minimum System Requirements/Configuration

System	Maximum Number of web.Client Users Per Server		Maximum Number of Cyber-Stations	Maximum Number of IIS Servers
	When IIS Is Installed on Windows 2000 Server or Windows Server 2003	When IIS Is Installed on Windows 2000 Workstation or XP Professional Workstation		
LAN	25	2	Unlimited	Unlimited
Standalone	2	2	1	1

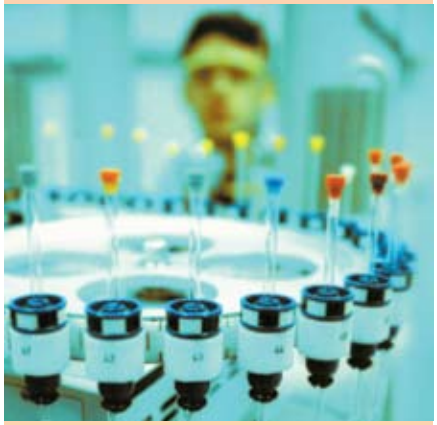
web.Client Pro Software

Up to 1 Concurrent User	WEBC-1-PRO-USB
Up to 2 Concurrent Users	WEBC-2-PRO-USB
Up to 5 Concurrent Users	WEBC-5-PRO-USB
Up to 10 Concurrent Users	WEBC-10-PRO-USB
Up to 15 Concurrent Users	WEBC-15-PRO-USB
Up to 20 Concurrent Users	WEBC-20-PRO-USB
Up to 25 Concurrent Users	WEBC-25-PRO-USB

web.Client Personnel Manager Software

Up to 1 Concurrent User	WEBC-1-PM-USB
Up to 2 Concurrent Users	WEBC-2-PM-USB
Up to 5 Concurrent Users	WEBC-5-PM-USB
Up to 10 Concurrent Users	WEBC-10-PM-USB
Up to 15 Concurrent Users	WEBC-15-PM-USB
Up to 20 Concurrent Users	WEBC-20-PM-USB
Up to 25 Concurrent Users	WEBC-25-PM-USB

Continuum CyberStation **CFR Compliance Pack**



- *CyberStation Enhancement Helps Life Sciences Facilities Achieve Regulatory Compliance*
- *Provides Facility-wide Accountability and Traceability of Environmental and Security Conditions*
- *Answers the Who?, What?, When?, Where?, and Why? Questions of a Regulated Facility*
- *Two Versions Available to Meet Basic and Advanced Archiving and Reporting Requirements*
- *Archivers Available:*
  Extended Logs
  Alarm Events
  User Activity Events
  Access Events
- *Archive Reporters Available:*
  Extended Logs
  Alarm Events
  User Activity Events
  Access Events
- *Automatic and On-demand Secured PDF Format Report Generation*

CFR Compliance Pack

The Continuum CFR Compliance Pack software product range enhances the Andover Continuum system to provide FDA-regulated businesses with the information they need to achieve regulatory compliance for their facilities. Using 21 CFR Part 11 electronic record and signature standards, CFR Compliance Pack maintains a complete archive of all events and parameters related to the environmental and security conditions of a facility.

A Continuum CyberStation workstation with a CFR Compliance Pack option provides multiple benefits to FDA-regulated businesses:

- *Comprehensive password management features*
- *Enforced operator prompts for all system changes and alarm acknowledgments*
- *User account management enhancements*
- *Alarm generation for invalid and disabled user logon attempts*
- *Secure data point and event logging and archiving*
- *Powerful report generation capabilities*
- *Detailed audit trails*

Basic and Advanced Features Available

The Continuum CFR Compliance Pack is available in two versions, Basic and Advanced. Both versions include the rigorous password management and operator prompting features described above; the difference is in the archiving and archive reporting levels.

CFR Compliance Pack, Basic and Advanced versions, are ordered by appending the following suffixes to any Programmer's Edition of CyberStation LAN software.

For a System using CFR Compliance Pack Basic:

-CFRB *CFR Compliance Pack Basic, includes the Extended Log Archiver and Archive Reporter, for the first Workstation ONLY*

-CFRBV *CFR Compliance Pack Basic Viewer, for additional Workstations, includes the Extended Log Archive Reporter*

For a System using CFR Compliance Pack Advanced:

-CFRA *CFR Compliance Pack Advanced, includes the Extended Log, Alarm, User Activity and Access event Archivers and Archive Reporters, for the first Workstation ONLY*

-CFRAV *CFR Compliance Pack Advanced Viewer, for additional Workstations, includes the Extended Log, Alarm, User Activity, and Access event Archive Reporters*

Note:

CFR Compliance Pack, Basic and Advanced, requires CyberStation Version 1.6 or greater.

Add-On Reporting Modules for Continuum

Built on top of Continuum CyberStation's already powerful, flexible and easy-to-use standard reporting modules are a growing list of options to further increase the productivity and efficiency in managing facilities. Each reporting option can easily be added to existing installations by purchasing a licence code to enable the specific module.

CyberStation standard reports include:

- *Access Events*
- *Areas/Cardholders*
- *Access Events Sorted by Department*
- *Areas/Doors*
- *Alarms*
- *User Activity*

With any of these standard reports, users can search based on a selected time frame and other important selection criteria, using a simple ad-hoc report generation screen.

Access Event Archiver Bundle

Provides the automatic gathering, storage and reporting of Continuum access events using portable database files that are easily backed up.

- *Automatic Access Event Archiver*
- *Access Event Exporter*
- *Access Event Report Viewer*

Additional Report Viewers to remotely view the archiver can be purchased separately as needed for additional workstations.

Access Events Archiver	**AE-ARCHIVER**
Archived Access Event Viewer	**AE-ARCHVIEW**

Access Event Plus

Provides end-users with valuable door and cardholder access information for selected areas and timeframes. The following timesaving capabilities are included:

- *Save report configuration settings for future recall*
- *Manually and automatically e-mail an access report to a list of recipients*
- *Automatic printing of access reports*
- *Automatic saving of access reports to file*

Access Events Plus	**AE-PLUS**

Access Events Selected by Department

Enables end users to print reports that include and sort by department.

Access Events Selected by Department	**AE-SELDEPT**

On Site Muster Reporting

Provides quick reporting during an emergency of all cardholders currently present in selected areas, sorted either by area or by department.

Muster Report	**AE-MUSTER**

Alarms Plus

Provides the following timesaving capabilities:

- *Save report configuaration settings for future recall*
- *Manually and automatically e-mail an alarm report to a list of recipients*
- *Automatically e-mail an alarm report to a list of recipients*
- *Automatic printing of alarm reports*
- *Automatic saving of alarm reports to file*

Alarms Plus	**AL-PLUS**

Alarms - Categories

Provides quick sorting and reporting of alarms and alarm category statistics. Two different types of reports can be run and printed:

- *A standard Alarms - Categories Report sorts the alarms by category*
- *An Alarm Statistics Report shows the number of alarms per selected category along with the percentage*

Alarms - Category	**AL-CATEGORY**

Area Purge

Purges (removes) selected personnel's access to areas in a facility based on cardholder inactivity for these areas during a specified time period. It provides a variety of reporting options and e-mailing capability. In the unlikely event that certain cardholders are purged inadvertently, an "Area UnPurge" feature allows you to quickly and easily restore purged areas and schedule.

Area Purge - 10,000 personnel or less	**AREAPURGE-10**
Area Purge - unlimited personnel	**AREAPURGE**

Extended Log Archiver

Facilitates the automatic gathering, storage and reporting of Continuum Extended Logs using portable database files that are easily backed up. The Archived Extended Log Report application not only provides tabular reports with data values, but also has the ability to send data back to Continuum for viewing and charting using the Continuum Log Viewer.

Extended Log Archiver	**EXTLOG**
Encrypted Extended Log Archiver	**EXTLOG-ENC**
Archived Extended Log Viewer	**EXTLOGVIEW**

Remote Reports

Provides the ability to run the six standard Continuum reports on non-CyberStation workstations.

Note:

No Continuum security is supported for this feature, and network connectivity to the Continuum file server is required.

Remote Reports	**REPORTS-R**

Time Tracker

Provides basic time totalisation of hours worked, based on card access events in the Continuum system database. Daily, weekly and monthly time totals reports are included.

Time Tracker	**TIMETRACKER**

Elevator Control

Provides convenient tools to assign precise, floor-by-floor elevator access to your personnel. In a single building, the Elevator Control module can configure up to six banks of elevators; with each bank configured for up to eight elevator cabs, and each cab configured for up to 100 floors.

Elevator Control	**ELEVATOR**

Video Monitor (Standard on Continuum 1.73 & Above)

Instantly integrate digital video into the CyberStation environment providing an immediate pop-up window alarm, showing the live digital video associated with the alarm point or door.

Video Monitor - DVX	**VIDMON-DVX**

Personnel Data Importer

Provides manual or automatic importing of personnel information from CSV files or DB tables.

Personnel Data Importer	**PDI-DB**

Continuum RoamIO$_2$ Service Tool

The RoamIO$_2$ Service Tool is a compact hardware adapter with software applications, that allows you to quickly connect to any Andover Continuum system using a Pocket PC or laptop. Designed to clip onto a technician's belt, this tool gives you the freedom of mobility through a local connection to a field bus or Ethernet network.

Supports Both BACnet and Infinet

The RoamIO$_2$ Service Tool comes with software to run the adapter as a BACnet Service Tool or an Infinet Service Tool on either a Windows Pocket PC or laptop. The BACnet Service Tool not only discovers and edits Andover Continuum BACnet controllers, but it also works with BACnet devices from third-parties. The Infinet Service Tool supports all generations of Infinet controllers, the original Infinity family as well as the current i2 family of Infinet Controllers.

Really Go Mobile with Wireless

Connect your Pocket PC or laptop to the RoamIO$_2$ Service Tool wirelessly using the standard onboard Bluetooth® wireless adapter. No longer are you tethered to the controller while balancing yourself on the top of a ladder, the wireless connection gives you the mobility you need to work efficiently. A wired serial connection is also available for computers without Bluetooth.

- *Easy to use operator interface including Explorer navigation*
- *Allows Flash file upgrades in the field to all controllers using its built-in loader programme*
- *Infinet or BACnet (Continuum or third party) compatible*
- *Up to 4 RoamIO$_2$ service tools can be connected to the Infinet field bus simultaneously*
- *Convenient, built-in belt clip for easy portability*
- *Battery powered*
- *Bluetooth operation*
- *CE approved*

Battery	2 x AA cells, 50+ hours battery life
Dimensions	130mm (H) x 70mm (W) x 40mm (D) (including clip)
Kit Contents	RoamIO$_2$ unit with belt clip • 2 x AA batteries • Cable kit, which includes: 1 x RJ-11 to RJ-11 1.8m cable 1 x RJ-11 to Berg adaptor 1 x RJ-11 to Jack-style sensor adaptor • CD with software for Pocket PC • User Manual

Application Details	Andover Continuum		Third Party
	Infinet i2 Controllers	bCX1, b3, b4 Controllers	BACnet Controllers
Ethernet Support	No	Yes	Yes
Discover Controllers	Yes	Yes	Yes*
View/Edit Points	Yes	Yes	Yes*
Set Date & Time	Yes	Yes	Yes*
Set MAC IDs**	No	Yes	–
Perform Continuum "Learn"***	Yes	Yes	–
Update Controller OS	Yes	Yes	–
Rename Objects	Yes	Yes	–
View Trend log data	–	Yes	Yes*
View Schedule data	–	Yes	Yes*
View Programme status	–	Yes	Yes*
Start/Stop, Programmes	–	Yes	Yes*
Backup & Restore	–	Yes	Yes*

* Please check third party PICS for support of this function

** During start-up and commissioning of controllers only

*** Requires a network level controller to be online

Desktop or laptop PC requirements	• Operating System – Microsoft Windows XP, Windows 2000 • Active Sync 3.8, 4.0 • CD ROM Drive • 32 MB RAM • Bluetooth wireless or USB port# or RS-232 serial port# • 5 MB available hard drive space
Pocket PC Requirements	• Operating System –Pocket PC 2002, Windows Mobile 2003 for Pocket PC, Windows Mobile Version 5.0 • Active Sync 3.8, 4.0 • Bluetooth wireless or RS-232 serial port# • Cradle or synchronized cable • 5 MB available hard drive space

Requires appropriate connectors and cables not supplied by TAC

Note:

Serial cable from RoamIO$_2$ to Pocket PC is not included

Continuum RoamIO$_2$ Service Tool **ROAMIO-2**

Notes

Infinet Controllers

Andover Continuum Infinet Family of Controllers

Andover Continuum is a full system of controllers and user interface software products that can be combined in many different ways to customise the system to site requirements. Whether the site is a single building or across multiple locations, Andover Continuum is scalable and adaptable. It can even be tailored for specialised environments. For example, in the highly regulated life sciences industry, the system can be installed and validated to support compliance with FDA regulations.

Full Powered Network Controllers

Andover Continuum's Ethernet-based network controllers are the most powerful in the industry and go far beyond basic routing to field buses. They also act as programmable controllers, web servers, open and proprietary protocol gateways, and alarm and event distribution engines, as well as SNMP, OPC, and email servers.

Intelligent and Reliable Field Controllers

A facility is affected by the reliability of the control system. That's why TAC has distributed intelligence down to the local device level of every controller. These peer-to-peer devices provide stand-alone control, running their own programmes, schedules, and trends, and issuing their own alarms and events. When connected to an Andover Continuum system via a field bus network, they can share data globally with any controller on the network. This global point addressing capability allows for coordinated control and reduces overall installation costs.

The Continuum bCX1 is a feature-rich, yet cost-effective network controller that supports the Infinet family of field controllers.

The controller provides a full function 10/100 Ethernet connection and support for up to 127 Infinet field controllers, with a second communication port available for a modem connection or a Plain English™ driver. This full function network controller provides global control for all of its field controllers and a simple easy-to-use web configuration interface. The bCX1 also provides a TCP/IP interface for custom web pages, along with SNMP monitoring and optional SNMP alarm delivery. The bCX1 also has the ability to add expansion I/O for local control via the xP family of expansion modules.

- *10/100 Ethernet Port*
- *Expandable for Local I/O and Display using Andover's xP Expansion Modules*
- *Advanced Flash Memory Provides Utmost Reliability – Stores Application Programme, Operating System, and Run-time Data*
- *Flash Memory Allows Easy On-Line Software Updates*
- *Dial-in Communications Support*
- *Support for Custom Embedded Web Server*
- *SNMP Monitoring*
- *SNMP Alarming Option*
- *XDrive Option Support*
- *Redundant Alarming Support*

Technical Specifications	
Power:	24VAC, +10% -15%, 50/60 Hz, 12-28 VDC auto sensing
Operating Range:	0 to +49°C 10–95% RH (non-condensing)
Dimensions:	139mm (H) x 213mm (W) x 62mm (D)
Battery:	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.
Memory:	32MB SDRAM, 16MB FLASH

Inputs/Outputs
I/O expansion port for the addition of up to two Andover xP expansion modules

bCX1-CR-0-INF 0 NODE — **bCX1-CR-0-INF**

Controller/Router, 0 Node Support, Infinet

bCX1-CR-8-INF 8 NODE — **bCX1-CR-8-INF**

Controller/Router, 8 Node Support, Infinet

bCX1-CR-32-INF 32 NODE — **bCX1-CR-32-INF**

Controller/Router, 32 Node Support, Infinet

bCX1-CR-64-INF 64 NODE — **bCX1-CR-64-INF**

Controller/Router, 64 Node Support, Infinet

bCX1-CR-127-INF 127 NODE — **bCX1-CR-127-INF**

Controller/Router, 127 Node Support, Infinet

XDriver Support

Turn your bCX1 into a powerful gateway by enabling one of the bCX1's two comm. ports as an XDriver port. With an XDriver installed, the Andover Continuum system becomes integrated with third party equipment, allowing common control from Plain English programmes as well as monitoring and setpoint adjustment from CyberStation or web.Client. This option may be purchased with new bCX1 controllers or as an upgrade to an existing bCX1.

XDriver — **XDriver**

Modbus/IP and Modbus/RTU XDrivers

With the initial release of this feature, two XDrivers have been compiled for the bCX1 – Modbus®/IP and Modbus/RTU. Modbus has been the most popular XDriver on the NetController. This open protocol can be found on a wide range of building equipment – RTUs, power meters, chillers, breaker panels, variable speed drives, and so on. The Modbus/RTU driver is used with Modbus equipment that is networked using RS-485 wiring and the Modbus/IP driver is used with Modbus equipment that is networked over Ethernet.

Modbus/IP — **Modbus/IP**

Modbus/RTU — **Modbus/RTU**

TAC provides high performance network management with the Continuum family of CX programmable network controllers. NetControllers use LON® technology I/O Modules, while Continuum's Infinet field controllers provide stand-alone direct digital control of your building services. Continuum network controllers act as system co-ordinators for the distributed intelligent I/O modules providing:

- *Network communications and integrated global control across an Ethernet network*
- *Full programmability using Plain English programming language*
- *User-friendly menu driven interface*
- *Local and remote alarming*
- *Use of TCP/IP (Internet) protocol*
- *Programmable RS-232/485 connections for modems, terminals and printers*
- *Direct programmable serial communications to third party equipment.*
- *Optional command-line interface*
- *Support for up to two RS-485 Infinet field bus networks*
- *In-built Webserver capability*
- *Suitable for Netcontroller I and Netcontroller II*

Continuum CX9900 Power Supply Unit (PSU)

The Continuum CX9900 power supply provides 24VDC power to the CX9900 NetController (or NetController II) and associated I/O Modules. Powered by 120-240 VAC with optional full UPS capability. A selection of programmable battery back-up modes is possible via Plain English programming. The unit is capable of DIN rail or screw-in mounting with plug-in connection to Continuum NetController or I/O Modules. CE Approved.

CX9900 P.S.U. (UPS) Battery Package — **CX99-PSU-BATT**

220/240 VAC 50/60 Hz Input, 70 VA output with UPS circuit. Package includes a 24V DC power source and 2x 12V 6.5Ahr sealed rechargeable batteries, clamp, cables and accessories.

CX9900 P.S.U. (UPS) Cable Package — **CX99-PSU-CABL**

220/240 VAC 50/60 Hz Input, 70 VA output with UPS circuit. Package includes battery cables (batteries not included, requires 2x 01-2100-423).

CX9900 P.S.U. (No UPS) — **PS120/240-AC85**

220/240 VAC 50/60 Hz Input, 50 VA output without UPS circuit.

Bag of 20 Female Connectors for I/O bus — **01-0010-840**

These connectors plug into the right side of the NetControllers, a single I/O module or string of I/O modules. There are 5 male plug-in connectors on the left and screw terminals on the right.

Single Male Connector for PS NetController — **01-2050-285**

These connectors plug into the left side of the NetController, a single I/O module or string of I/O modules.

Continuum 12V Battery, 6.5 amp — **01-2100-423**

PSU requires 2 x batteries.

NetController II CPU Module

The Andover Continuum NetController II is a redesigned version of the NetController, a high-powered Central Processing Unit (CPU) module and network manager for the Andover Continuum intelligent building system. With its 128 MB DDR SDRAM, 32 MB flash, and four programmable communications ports (including an interface to TAC's Infinet distributed controllers), the NetController II provides a total solution for facility-wide network communications and information management. Of the total DDR SDRAM memory, 12 MB is allocated for application and run-time data and 48 MB for personnel records.

The NetController II is compatible with Andover Continuum CyberStation software version 1.8 and higher, and includes new features such as network security, condition level, area lockdown, and email.

- *Native Ethernet IP Network Controller*
- *Powerful, modular CPU board for monitoring and control of both Andover Continuum I/O Modules and Infinet distributed controllers*
- *High-speed networking – 4 million nodes on Ethernet*
- *Four programmable comm. ports for flexible interconnectivity and third party communications*
- *Programmable battery backup provides choice of shutdown options*
- *Flash for easy online software updates*
- *Andover Plain English language simplifies programming*
- *DIN rail mounting and slide-together connectors for easy installation*
- *Backward compatible with TAC's Infinity hardware*
- *Secure Ethernet communications with IPsec/IKE Encryption and hardware acceleration*
- *Easy configuration using embedded configuration web pages*
- *Support for Area Lockdown and Condition "Threat" Level based access rights*
- *Support for up to 32 Wireless Infinet controllers*

Technical Specifications	
Power:	24VAC, 50/60 Hz, 12-28 VDC auto-sensing
Operation Environment:	0°C to +49°C, 10-95% RH (non-condensing)
Dimensions:	152.4mm (H) x 222.3mm (W) x 63.5mm (D)
Battery:	Sealed rechargeable, batteries provide 60 minutes @ 35 Watts power consumption full UPS; 7 day DDRSDRAM and real-time clock. Expandable
I/O Bus:	Direct connection of up to 32 Continuum I/O modules

NetController II

Continuum 1.8 or higher is required. NetController II part numbers define the options required, as illustrated below.

NetController II part numbers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
N	C	2	-		-									0

Character Position	Options	Description
1st-4th	NC2-	All NetController II part numbers start with "NC2-"
5th	F	F for FTT-10A Free topology I/O bus interface
	R	R for RS485 I/O Bus Interface
6th	-	6th character is always "-"
7th - 9th	000	Number of Infinet nodes supported.
	008	Note: Zeros are included in node counts to take up 3 character spaces
	032	
	064	
	127	
	254	
10th	H	H for High Encryption
	0	0 for no Encryption
11th	X	X for XDriver Support
	0	0 for no XDriver Support
		By default, XDriver option enables Comm1 and Ethernet level XDriver. Contact TAC for a different configuration.
12th	M	M for Modem
	0	0 for no Modem
13th	A	A for Advanced Alarming. (includes both SNMP & Redundant Alarming)
	0	0 for no Alarming options
14th	C	C for Critical Security Features (includes Condition "Threat" Level)
	0	0 for no Critical Security features
15th	0	15th character is always "0"

Examples.	
NC2-R-00000M000	NetC II, RS485, 0 nodes, Modem
NC2-F-0320X0A00	NetC II, FTT-10A, 32 Nodes, XDriver Enabled, Advanced Alarming
NC2-R-254HXMAC0	NetC II, RS485, 254 nodes, High Encryption, XDriver enabled, Modem, Advanced Alarming & Critical Security

Continuum CX9900 Central Processing Unit (CPU)

The Continuum CX9900 CPU provides monitoring and control of both Continuum I/O modules and Infinet distributed controllers. Flash memory allows easy on-line software upgrades and is freely programmable using Plain English programming. The CX9900 connects the high speed Ethernet network to local networks. Quick release fasteners enable DIN rail mounting without the need for tools.

- *ACC-LON RS-485, and ACC-LON FTT-10A protocol options*
- *Twisted Pair (10 Base T) or Fibre Optic (10 Base F) & Ethernet connection options*
- *4 programmable ports for use with Infinet, user terminals, printers, modems and third party protocols*
- *LEDs for status & communication*
- *Power consumption is 10watts @ 24VDC max*
- *Math co-processor included when NetController is configured with 8MB RAM*
- *Webserver option enabled as standard.*
- *When used in access control systems:*
  4MB RAM Modules - 5000 personnel records for security
  8MB RAM Modules - 78000 personnel records for security

Note:

All NetControllers are TCP/IP. CE Approved.

Description	ACC-LON RS-485 Modules Part Number	ACC-LON FTT Modules Part Number
No Infinet Ports, 2 Comms ports (Port 1 RS-232. Port 3 RS-232):		
4MB RAM, 16 I/O Modules*	4M-16I/0-T	4M-16I/O-T-FT
8MB RAM 32 I/O Modules*	8M-32I/0-T	8M-32I/0-T-FT
32 I/O Modules, 4 Comms ports (Port 1 RS-485 or RS-232, Port 2 RS-485, Port 3 RS-232, Port 4 RS-485):		
4MB RAM, 4 Infinet node limit	4M-4-T	4M-4-T-FT
4MB RAM, 8 Infinet node limit	4M-8-T	4M-8-T-FT
4MB RAM, 32 Infinet node limit	4M-32-T	4M-32-T-FT
4MB RAM, 64 Infinet node limit	4M-64-T	4M-64-T-FT
8MB RAM, 4 Infinet node limit	8M-4-T	8M-4-T-FT
8MB RAM, 8 Infinet node limit	8M-8-T	8M-8-T-FT
8MB RAM, 32 Infinet node limit	8M-32-T	8M-32-T-FT
8MB RAM, 64 Infinet node limit	8M-64-T	8M-64-T-FT
8MB RAM, 127 Infinet node limit	8M-127-T	8M-127-T-FT
8MB RAM, 254 Infinet node limit	8M-254-T	8M-254-T-FT

** Cannot be upgraded to support Infinet field bus*

XDriver Option

The CX9900 supports the use of TAC's third party communication interfaces called XDrivers.

XDrivers are written in binary format and require that the controller be purchased with this feature enabled on one or more specified communication ports. The communication port should be selected according to the protocol type of the XDriver required (RS-485 or RS-232). Ethernet XDrivers communicate via the Ethernet port, but they require an RS communication port to be allocated. This port cannot be used for other purposes. The CX9900 can support a maximum of 2 XDrivers.

Continuum Input / Output Modules

The Continuum I/O modules feature a sleek, lightweight casing and a 3-position front cover for easy, hands-free access. Built-in quick-release fasteners at the back of each I/O module are provided for DIN rail mounting, no tools required. These fasteners snap into a locked position for panel mounting. Input and output connectors are located at the bottom of each I/O module and are removable for easy field access and maintenance.

The I/O modules communicate with the NetController CPU module using ACC-LON RS-485 communications (FTT modules are also available, described later). The I/O modules slide together via built-in connectors on either side, so network expansion is quick and easy. Both power and communication signals feed through these connectors. A single module or groups of I/O modules can be remotely located, connected using approved cable, and unless otherwise stated are powered from a local DC power supply. Each I/O module features its own network push-button, thus reducing commissioning time. All modules are CE approved.

UI-8-10 Input Module

8 Universal Inputs (supervised, voltage, thermistor, digital, counter). Power requirements are 10-28 VDC, 0.7 watts.

5 volt input, 10 bit resolution	UI-8-10
10 volt input, 10 bit resolution	UI-8-10-10V

DI-8 Input Module

8 Digital inputs (digital, counter) can accept volt free contact - 24VDC/AC max @ 0.5mA. 2 counters at 10Khz max. 6 counters at 10Hz max. Power requirements are 10-28 VDC, 0.7 watts.

Input Module	DI-8

DI-6-AC Input Module

6 AC inputs for on/off status. Wire AC or DC voltage up to 250V directly to the terminals. Power requirements are 24 VDC, 0.7 watts.

24-120V (>20V = On; <12V = Off)	DI-6-AC
120-240V (>90V = On; <45V = Off)	DI-6-AC-HV

MI-6 Input Module

6 two wire 0-20mA inputs, direct-wired. Power requirements are 24 VDC, 3.8 watts.

Input Module	MI-6

DM-20 Input Module

20 channel-selectable inputs or outputs drive LEDs and/or sense switches on a graphic annunciation panel. May be used with DIO/20 expansion board and solid state relays for higher load applications. Power requirements are 24 VDC, 0.5 watts.

Input/Output Module	DM-20

AO-4-8 Output Module

4 Analogue outputs, 8-bit resolution. 0-10VDC or 0-20mA output. Power requirements are 24 VDC, 3.8 watts.

With 3 position override switches/potentiometers with feedback	AO-4-8-O
Without overrides	AO-4-8

DO-4-R Output Module

4 digital outputs, Form C relays (5A, 240VAC/30VDC). PWM control of 0.1 seconds. Combine 2 outputs into 1 tri-state. Output status LEDs. Power requirements are 10-28 VDC, 2.8 watts.

With 3 position override switches with feedback	DO-4-R-O

DO-6-TR Output Module

6 digital outputs, Form A optically isolated triacs (0.5A, 24VAC). PWM control of 0.1 seconds. Combine 2 outputs into 1 tri-state. Power requirements are 24VDC, 1.1 watts. Minimum current required for correct switching is 30mA. No DC loads.

Output Module **DO-6-TR**

AC-1 Input/Output Module

Full I/O for one door or portal. 1 reader/keypad input, handling either combo reader/keypad units or separate units. Wiegand or proximity readers only. 3 supervised inputs, 2 Form C outputs, (5A, 24VAC/DC) with local override and feedback. Power requirements are 24VDC, 2.6 watts (plus reader power requirements). Reader power on-board 5V/120mA. 2 Site codes stored for degrade mode operation.

Wiegand **AC-1**

AC-1A Input/Output Module

Full I/O for one door or portal. 1 reader/keypad input, handling either combo reader/keypad units or separate units. Wiegand or proximity readers only. 3 Supervised inputs, 2 Form C outputs (5A, 24VAC/DC) with local override and feedback. Power requirements are 10-28VDC, 2.6 watts (plus reader power requirements). Reader power on-board: 5V/50mA. 2 Site codes stored for degrade mode operation.

Wiegand **AC-1A**

AC-1 Plus Input/Output Module

Enhanced I/O for one door or portal. 1 reader/keypad input, handling either combination reader/keypad units, magnetic stripe readers, proximity readers, ABA format or Wiegand cardkey readers. 5 supervised inputs. 2 Form C outputs (5A, 24VAC/DC) with local override and feedback. Power requirements are 10-28VDC, 2.6 watts (plus reader power requirements). Reader power on-board: 5V/50mA. 4 Site codes stored for degrade mode operation.

Wiegand/ABA **AC-1Plus**

ACC-LON FTT (Free Topology Transceiver) I/O Modules

All Continuum I/O modules are also available with an ACC-LON FTT interface, which provides increased flexibility and reliability for your installation. FTT modules are connected using a twisted-pair cable and can be wired in a bus, star, distributed star, or even a ring topology for added resilience. Third party repeaters and converters are available for special applications (FTT-to-fibre, FTT-to-leased-line, etc.). Also, each module is protected with 1500V transformer-coupled isolation.

For ACC-LON FTT compliant modules add -FT to the end of the Part Number when ordering

Example ***-**-*-FT = DO-4-R-O-FT***

Note:

The CX9900 NetController must also be configured for FTT operation.

Infistat Display Interface

The Infistat Display Module is a convenient, programmable interface for your facility management system. Provides authorised operators quick and easy access to HVAC or security information, and/or enables them to adjust personal comfort levels with little or no training. The Infistat can co-exist with other Continuum I/O modules, such as the UI-8-10, DI-8, AO-4-8, etc. (up to 32 modules per single NetController).

- *Provides convenient access to Continuum building management systems*
- *Can be mounted remotely and powered from an external 24VAC power source*
- *Measures local temperature using a thermistor*
- *Includes a 2 line, 16-character LCD display with an audible beeper*
- *12 button, ergonomically designed programmable keypad with flip down cover, using Plain English script*
- *Cost-effective, compact and attractive; Infistat blends into the decor of any facility*
- *Wall-mountable and for indoor use only; Panel and DIN Rail Mounting Kits are available separately*

Operating Range:	+10°C to +40°C 10-95% RH (non-condensing)
Input Temperature Range:	+10°C to +38°C
Input Temperature Accuracy:	+/- 0.9°C
Sensing Element:	Type III Thermistor, 10k ohms @ 25°C
Dimensions:	185mm (H) x 177mm (W) x 38mm (D)

ACC LON Model (RS-485)	**ISTAT-A-4**
ACC LON Model (FTT)	**ISTAT-A-F**
Panel Mounting Kit	**ISTAT-FM-KIT**

LD-1 Local Display Module

The LD-1 Local Display Module provides a convenient, programmable interface to your facility automation system. Enables authorised people to easily arm or disarm a security zone, quickly view HVAC or security information and/or adjust personal comfort levels. The LD-1 can co-exist with other Continuum I/O modules, such as UI-8-10, DI-8, AO-4-8, etc. (up to 32 modules per single NetController).

- *4 Line, 16 character backlit LCD display*
- *Audible beeper output*
- *19 Button ergonomically designed keypad*
- *Keys can be custom programmed using Plain English script*
- *Cost effective and compact in size*
- *Suitable for fascia panel mounting or directly on the wall*
- *Intended for indoor use only*
- *FTT and RS485 models available*
- *CE approved*

Power:	12-24VDC @ 3.0W max.
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	118mm (H) x 153mm (W) x 38mm (D)

ACC LON Model (RS-485)	**LD-1**
ACC LON Model (FTT)	**LD-1-FT**

ACX Series for Ethernet

The ACX Series controllers for Ethernet are the most powerfull all-in-one access controllers available for the Andover Continuum product line. The controllers are designed from the ground up to handle the latest U.S. government security requirements. Additionally, the ACX Series is just as attractive for one as it is for eight door installations.

Onboard I/O for Access Control

There are two base hardware models: the 5720 and the 5740. The 5740 has double the inputs, readers and outputs onboard as the 5720. These models come standard with the following I/O configurations:

ACX Series	5720	5740
Universal Inputs	6	12
Reader Inputs	4	8
Tamper Input	1	1
Digital Lock Outputs	2	4

The ACX is designed to support both entry and egress readers while supplying +5 or +12 VDC to each reader (120mA & 180mA respectively).

- *10/100 Base-T Ethernet with 192-bit IPsec/IKE Encryption – fast and secure IP communications for Network Security*
- *480k personnel record capacity enables personnel records to be stored locally*
- *32MB of Flash Memory and 128MB of dynamic RAM ensure dynamic memory retention*
- *Advanced Reader Inputs with dedicated processor – leverage the power of the latest reader technologies*
- *Support for Area Lockdown – for rapid "Lockdown" of affected areas when potential threats are detected*
- *Condition "Threat" level-based Access Rights – for automatic adjustment of Access rights when conditions and threat levels change*
- *xP Module Support – create a controller tailored to your needs*
- *Full Card Format Support up to 256-bit – supports the past while planning for the future of access card technologies*
- *SNMP Support – provides for easy IT-friendly monitoring of the access controller.*
- *Modbus XDriver Support – allows Andover Continuum to link with Modbus equipment*
- *Support for 8 or 32 Infinet nodes*

Technical Specifications	
Power:	24VAC, 50/60 Hz, 12-28 VDC auto-sensing
Power Consumption:	90 VA (AC) 50 W (DC)
Operating Range:	0 to +50°C 10-90% RH (non-condensing)
Internal Battery:	NiMH, 3.6 VDC, 800 mAh
Battery Backup:	Minimum 7 days DDR SDRAM and real-time clock
Memory:	SDRAM: 128MB; FLASH: 32MB
Dimensions:	210mm (W) x 241mm (L) x 57mm (H)

ACX part numbers

1	2	3	4	5	6	7	8	9	10	11	12	13
A	C	X	-		-							

Character Position	Options	Description
1st-4th	ACX-	All part numbers start with ACX-
5th	2	"2" for 4 Card Readers, 6 DI, 2 DO, (5720)
	4	"4" for 8 Card Readers, 12 DI, 4 DO, (5740)
6th	-	6th character is always "-"
7th-9th	000	No Nodes supported
	008	8 Nodes supported
	032	32 Nodes supported
10th	H	"H" for High Level Encryption
	0	0 for no Encryption
11th	X	X for XDriver Support
	0	0 for no XDriver Support
		Note. Enables Comm 1 & Ethernet level XDriver
12th	A	A for Advanced Alarming (includes both SNMP & Redundant Alarming)
	0	0 for no Alarming options
13th	C	C for Critical Security Features (includes Condition "Threat" Level)
	0	0 for no Critical Security features
Examples:		
ACX-2-000HXAC		ACX5720, 4 Readers, High Encryption, XDriver Enabled, Advanced Alarming, Critical Security.
ACX-4-00000AC		ACX5740, 8 Readers, Advanced Alarming, Critical Security

CX9702 AccessController

Designed for small, unmanned, or remote sites, the CX9702 AccessController provides networked, electronic access control, temperature control, and alarm monitoring in a single, cost-effective controller. A fully stand-alone device, the CX9702 controls two doors, monitors four supervised alarm contacts and four universal alarm inputs, and includes two digital outputs for control of HVAC equipment. Through its on-board Infinet field bus, the system can be expanded to include DDC temperature control, lighting control, or additional monitoring with up to four stand-alone Infinet controllers.

The CX9702 forms part of an integrated Continuum Facility Management System, and is monitored and controlled through Continuum CyberStation operator workstations, or Continuum's web-based companion, web.Client. Through dynamic, graphical displays, users can analyse system alarms and live conditions, and can change setpoints, alarm thresholds, and operating modes instantaneously. Card access records can be edited, privileges granted, and event history analysed to maintain the highest levels of security. An interface to digital video recording is easily accomplished so that any alarm seen by the CX9702 will cause the correct camera to "pop-up" to the operator, and to record the event for future call-up.

- *Single, Economical Solution for Small, Unmanned, or Remote Telecom Sites, Providing:*
  - *Alarm Monitoring*
  - *Access Control*
  - *Temperature Control*
- *Native TCP/IP Communications for Easy Network Connectivity*
- *Monitor Temperature, Humidity, Fire, Power with Universal Inputs*
- *SNMP Compatible – Allows Alarms to be Sent to Third party Network Management Systems*
- *Supports web.Client, Continuum's Web-Based User Interface*
- *Expansion via Continuum's Infinet Distributed Controllers*
- *Power and UPS Provided for Locks, Readers, Peripherals – Saves Installation Time*
- *Total Point Count: 8 Inputs, 2 Reader Inputs, 4 Outputs*

Technical Specifications	
Power:	115/230VAC, 50/60 Hz, 115VA consumption
Peripheral Power:	30W, 5V/12V/24V (included in consumption total), for readers and locks
Overload Protection:	Fused with 1.5A 3AG fuse, 1500 volt transformer isolation. MOV protected.
Battery:	Qty 1, 12V / 7.0 AHr lead-acid battery (included with enclosure bundles)
Memory:	SDRAM: 32MB; FLASH: 4MB
Storage:	200,000 Card Records, with 2,000 Events
Software Compatibility:	CyberStation 1.53 or greater

Inputs/Outputs	
Card Reader Type:	Supports Wiegand swipe and proximity readers, and keypads that support the Wiegand 8-bit burst format. Also supports ABA mag stripe readers.
Card Reader Power:	5 V @ 120mA, 12V @ 180 mA, fused, jumper-selectable per controller
Door Strike Relay Outputs:	2 Form C relays, no override switches. Usable as general purpose digital outputs.
Door Strike Power:	12V @ 1A, 24V @ 300 mA per output, fused, jumper-selectable per controller. Power can be interrupted by removing a jumper.
Digital Relay Outputs:	2 Form C relays, with local override switches
Output Indication:	LEDs
Relay Contact Rating:	3A@24VAC; 3A@30VDC

CX9702 AccessController **CX9702**

2 reader inputs, 8 inputs, 4 DO, 10/100bT open class

CX9702 AccessController **CX9702-4**

2 reader inputs, 8 inputs, 4 DO, 10/100bT 4 Infinet nodes, open class

i2 Family of Controllers

TAC continues to provide powerful, state-of-the-art controllers to keep up with tomorrow's fast paced world. Introducing the Infinet II (i2) family of controllers – ready to meet your most challenging control applications. The i2 controllers come packed with exciting new features to make your control projects easier.

Please Note: All Infinet II controllers will only operate to their full capabilities when run on Continuum CyberStation v.1.5 or higher. However, the numerical equivalents to the Infinet I controllers (plus i2608 – equivalent to LCX800i) will be compatible with previous versions and operate as their predecessors.

i2 Family of Controllers – Features and Benefits

- *Non-Volatile Flash Memory Provides Utmost Reliability – Stores Both Application Programme and Operating System*
- *Flash Memory Allows Easy On-Line Software Updates*
- *Battery Back-up Provides Security of All Runtime Data*
- *Compatible with Both Continuum and Infinity Systems*
- *32-bit Processor Provides Fast Scan Times*
- *Modular, Sleek Design Simplifies Installation and Routine Maintenance*
- *View and Modify Information with Optional Remote LCD Display*
- *LED Indicators for Easy Troubleshooting*

i2920 System Controller

The Infinet II (i2) 920 controller is a stand-alone, freely programmable (using Plain English language), microprocessor-based system controller for DDC control. Capable of monitoring, controlling, scheduling and logging modular systems, the i2920 contains an I/O expansion port to meet additional point count needs, and an optional display with keypad for local viewing of point values and setpoint modifications. Up to 254 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network.

- *16 Universal inputs*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *8 Digital Form C relay-based outputs with overrides*
- *8 Analogue outputs with overrides*
- *I/O expansion port*
- *Removeable terminal blocks*
- *Local service port*
- *Real time clock*
- *Optional LCD display (4 line x 16 character) with keypad is available separately*
- *Compatible with both Continuum CyberStation and Infinity SX8000*
- *CE approved*

Technical Specifications	
Power:	115-230VAC, 50/60Hz @ 45VA
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	330mm (H) x 271mm (W) x 69mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	512KB RAM, 512KB FLASH

Inputs/Outputs	
Universal Input (12 bit):	Supervised, 0-10VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form C Relay-based Output:	SPDT 24VAC/30VDC @ 3A, 0.1 sec for PWM control
Analogue Output (8 bit):	0-10VDC or 4-20mA

i2920 without built-in LCD display and keypad	**i2920**
i2920 with built-in LCD display and keypad	**i2920-D**
Remote LCD display with keypad (max. distance 3m)	**xP-Display**

i2600 Series and i2800 Series Local Controllers

The Infinet II (i2) 600 and 800 are stand-alone, freely programmable (using Plain English language), microprocessor-based local controllers for DDC control, capable of monitoring, controlling, scheduling and logging modular systems. Up to 254 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network. Compatible with both Continuum CyberStation and Infinity SX8000.

Features i2800/i2804

- *8 Universal inputs*
- *Fixed terminal blocks*
- *Local service port*
- *4 Analogue outputs (i2804 only)*
- *CE approved*
- *8 or 4 Digital Form C relay-based outputs*
- *1 Room/Smart Sensor input*

Features i2608/i2624

- *8 or 24 Universal inputs*
- *Fixed terminal blocks*
- *Local service port*
- *No outputs*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 25VA or 12-28VDC
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	229mm (H) x 153mm (W) x 54mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB RAM, 128KB FLASH

Inputs/Outputs	
Universal Input (10 bit):	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form C Relay-based Output:	SPDT 24VAC/30VAC @3A, 0.1 sec for PWM control
Analogue Output (8 bit):	0-10VDC

	Universal Inputs	Room Sensor Input	Form C Relay Outputs	Analogue Outputs	Local Service Port	Part Number
i2800	8	1	8	-	✓	i2800
i2804	8	1	4	4	✓	i2804
i2608	8	-	-	-	✓	i2608
i2624	24	-	-	-	✓	i2624

i2810 Series Local Controllers

The Infinet II (i2) 810 is a stand-alone, freely programmable (using Plain English language), microprocessor-based local controller for DDC control. Capable of monitoring, controlling, scheduling and logging modular systems. The i2810 offers the same features as the i2800, plus an I/O expansion port, built-in overrides for manual control of each output, and an optional display with keypad for local information control (to be connected to I/O expansion port). Up to 254 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network.

- *8 Universal inputs*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *8 or 4 Digital Form C relay-based outputs with overrides*
- *4 Analogue outputs with overrides*
- *I/O expansion port*
- *Removable terminal blocks*
- *Local service port*
- *Real time clock*
- *Compatible with both Continuum CyberStation and Infinity SX8000 (i2810 only)*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 25VA or 12-28VDC
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	227mm (H) x 184mm (W) x 54mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	256KB RAM, 256KB FLASH

Inputs/Outputs	
Universal Input (12 bit):	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form C Relay-based Output:	SPDT 24VAC/30VDC @3A, 0.1 sec for PWM control
Analogue Output (8 bit):	0-10VDC

	Universal Inputs	Room Sensor Input	Form C Relay Outputs	Analogue Outputs	I/O Expansion Port	Local Service Port	Part Number
i2810	8	1	8	-	✓	✓	i2810
i2814	8	1	4	4	✓	✓	i2814

Optional

Remote LCD Display - with Keypad (max. distance 3m)	**xP-Display**

i2850 Series Terminal Controllers

Infinet II (i2) 850 series terminal controllers are stand-alone, freely programmable (using Plain English language), microprocessor based controllers used for cost-effective DDC control of individual terminal units. Capable of monitoring, controlling, scheduling and logging modular systems. Up to 254 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network.

- *Ideal for VAV applications where external damper actuators are used*
- *Contains an I/O expansion port for the addition of up to two xP expansion modules and an xP display.*
- *Service port provided*
- *DIN-rail or panel mounting*
- *Compatible with both Continuum CyberStation and Infinity SX8000*
- *CE approved*
- *RTC on i2851*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 20VA
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	139mm (H) x 207mm (W) x 62mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB SRAM, 1MB FLASH

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Airflow Sensor Input:	0 - 500Pa
Room Sensor Input:	0°C to +41°C
Form A Triac-based Output:	SPST 24VAC/VDC @3A, 0.1 sec for PWM control

	Universal Inputs	Airflow Sensor Inputs (0-500Pa)	Room Sensor Input	Form A Relay Outputs	Form K Tri-state Relay Output	Expansion Port	Part Number
i2850	4	1	1	3	1	✓	i2850
i2851	4	-	1	3	1	✓	i2851
i2853	4	2	1	3	1	✓	i2853

Optional

Remote LCD Display - with Keypad (max. distance 3m)	**xP-Display**

i2865-V/i2866-V VAV Controller

The Infinet II (i2) 865-V and 866-V are unique, low cost VAV box controllers that come equipped with a built-in damper actuator to streamline hardware installation and reduce commissioning time. Freely programmable using Plain English language, these stand-alone controllers are capable of monitoring, controlling, scheduling and logging modular systems. Service and Smart Sensor ports are provided. Up to 254 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network.

- *4 Universal inputs*
- *1 Airflow sensor*
- *3 Form A triac-based outputs*
- *1 Integrated damper actuator*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *Compatible with both Continuum CyberStation and Infinity SX8000*
- *CE approved*

The i2866-V model is identical to the i2865-V, with the exception that it also offers 2 analogue outputs to control reheat valves, lighting ballast control, position feedback, etc.

Technical Specifications	
Power:	24VAC, 50/60Hz @ 10VA
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	142mm (H) x 227mm (W) x 62mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB RAM, 1MB FLASH

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Airflow Sensor Input:	0-500Pa
Room Sensor Input:	0°C to +41°C
Form A Triac-based Output:	SPST 24VAC @ 0.5A (minimum 30mA), 0.1 sec for PWM control
Analogue Output **(i2866 only):**	0-10VDC, 5mA maximum
Damper Actuator:	3.95Nm torque, accepts shafts 6.35mm - 15.9mm (1/4" - 5/8") diameter

A separate isolation transformer must be used for each controller. On Infinity systems the master controller must be Revision 2.16 or greater.

i2865-V VAV Controller	**i2865-V**
i2866-V VAV Controller	**i2866-V**

i2867 Terminal Controller

The Infinet II (i2) 867 is a compact terminal controller providing low cost DDC control of package units, fan coil units, heat pumps and small AHU's that require both digital and analogue outputs. Freely programmable using Plain English language, the unit is provided with a service port and an input for a Smart Sensor, TAC's low cost programmable user interface. Up to 254 i2867 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network.

- *4 Universal inputs*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *5 Form A triac-based outputs*
- *2 Analogue outputs*
- *Compatible with both Continuum CyberStation and Infinity SX8000*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 4VA
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	157mm (H) x 89mm (W) x 64mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB SRAM, 1MB FLASH

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form A Triac-based Output:	SPST 24VAC/VDC @ 0.5A (minimum 30mA), 0.1 sec for PWM control
Analogue Output:	0-10VDC, 5mA maximum

A separate isolations transformer must be used for each i2867 controller. On Infinity systems the master controller must be Revision 2.16 or greater.

i2867 Terminal Controller **i2867**

i2885-V VAV Controller

The Infinet II (i2) 885-V is a unique low cost VAV box controller complete with a built-in actuator to simplify hardware installation and reduce commissioning time. Freely programmable using Plain English language, this stand-alone controller is capable of alarming, scheduling and logging modular systems. Up to 254 controllers can be networked on one CX master using Continuum's true peer-to-peer Infinet network.

- *2 Universal inputs*
- *1 Airflow sensor input*
- *2 Form A triac-based outputs*
- *1 Integrated damper actuator*
- *Compatible with Continuum CyberStation Version 1.5 or greater*
- *Service port provided*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 10VA
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	134.5mm (H) x 190.5mm (W) x 61mm (D)
Memory:	128KB SRAM, 512KB FLASH

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C), digital counter (4Hz)
Airflow Sensor Input:	0-250Pa
Form A Triac-based Output:	SPST 24VAC @ 0.5A (minimum 30mA), 0.1 sec for PWM control
Damper Actuator Diameter:	3.95Nm torque, accepts shafts 6.35mm - 15.9mm (1/4" - 5/8")

i2885-V VAV Controller **i2885-V**

i2887 Series Terminal Controllers

The Infinet II (i2) 887 is a fully programmable, low cost, general purpose terminal controller. It has all the power of an Infinet II controller, but with a small form factor. With its unique mix of three universal inputs, one Smart Sensor/room sensor input, four triac outputs and one relay output, the i2887 can be easily configured to control Heat Pumps, Fan Coils, or AC units. Use the i2887 for direct control of fans, staged heating and cooling and monitoring of room temperature, outside air temperature, return air temperature or occupancy status. The i2887 is compact so it can be installed in tight locations with three mounting screws, and its removable terminal connectors allow for easy servicing.

- *Compact Terminal Controller Provides Low Cost Fan Coil and Heat Pump Control*
- *Three Universal Inputs and One Smart Sensor/Room Sensor Input*
- *Four Form A Triac Outputs, One Form A Relay, 277 VAC@3A*
- *Non-Volatile Flash Memory Provides Utmost Reliability – Stores Both Application Programme and Operating System*
- *Flash Memory Allows Easy On-Line Software Updates*
- *Removable Terminal Blocks for Easy Serviceability*
- *View and Modify Information with Optional Smart Sensor Display*
- *Local On-Board Service Port*
- *Typical Applications:*
  - *Fan Coil Units*
  - *Heat Pumps*
  - *Chilled Beams*

Technical Specifications	
Power:	i2887: 24 VAC, +10% -15%, 50/60 Hz i2887-L-xxx: 115/230 VAC, +10% -15%, 50/60 Hz
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	i2887: 111mm (H) x 130mm (W) x 30mm (D)
	i2887-L-230: 111mm (H) x 186mm (W) x 59mm (D)
	i2887-L230-C: 149mm (H) x 206mm (W) x 70mm (D)
Memory:	512K SRAM, 1MB FLASH

i2887 Controller — **i2887**

i2887-L-230 Controller — **i2887-L-230**

230 volt supply

i2887-L-230-C Controller — **i2887-L-230-C**

230 volt supply with enclosure

i2 xP Expansion I/O Modules

The Infinet II (i2) "plug-in" expansion modules provide a convenient, low-cost, and flexible means to add additional input and output points to Continuum's distributed application controllers. Up to two modules (max.) plus a remote mounted (3m max.) display module can be powered directly from any Infinet Controller, maximum 180mA of power available. An external power supply can NOT be used to add additional modules.

- *Only the following controllers can accommodate i2 xP modules: i2920, i2810, i2814, i2850, i2851, i2853, bCX1 CR and ACX*
- *IP20 protection*
- *CE approved*

Technical Specifications	
Dimensions:	82mm (H) x 180mm (W) x 40mm (D)

Module	Description	Contact Rating	Power Consumption
Digital Inputs			
xPD18	8 digital inputs for dry contacts, which may also be configured as 140Hz counter inputs	0-5V, 140Hz	50mA
Analogue Outputs			
xPAO2	2 analogue outputs, 2 position potentiometer with no software feedback	0-10V, 0-20mA	80mA
xPAO4	4 analogue outputs, 2 position potentiometer with no software feedback	0-10V, 0-20mA	120mA
Digital Outputs			
xPDO2	2 digital Form C (SPDT) Relay outputs, 0.1 sec for PWM control	24VAC/30VDC @ 3A	60mA
xPDO4	4 digital Form C (SPDT) Relay outputs, 0.1 sec for PWM control	24VAC/30VDC @ 3A	100mA
xPUI4	4 universal inputs • Range 0 - 5.115VDC • Temp -34°C to +110°C • Counter 4Hz • Supervised and digital	24VAC/30VDC @ 3A	125mA
Bi-directional Models			
xPBD4	3 universal inputs • 1 UI/140Hz counter • 4 digital form C(SPDT) relay outputs	24VAC/30VDC @3A	125mA
xPBA4	3 universal inputs • 1 UI/140Hz counter • 4 analogue outputs 0-10VDC (no 0-20mA) with overrides	24VAC/30VDC @3A	60mA
Local Display Module			
xPDisplay	4 lines x 16 char, remote mountable @ max. 3m	N/A	60mA

i2 DI8 Digital Input Module	**xPDI8**
i2 AO2 Analogue Output Module	**xPAO2**
i2 AO4 Analogue Output Module	**xPAO4**
i2 DO2 Digital Output Module	**xPDO2**
i2 DO4 Digital Output Module	**xPDO4**
i2 Universal Input Module	**xPUI4**
i2 Local Display Module (900mm cable)	**xP-Display**
i2 Local Display Module (3m cable)	**xP-Display-10**
4UI / 4DO Expansion Module*	**xPBD4**
4UI / 4AO Expansion Module*	**xPBA4**

**bCX1-CR-xx and ACX only*

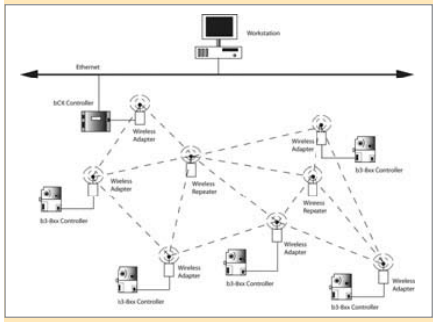
Product Overview

Andover Continuum is the first system to offer a full range Wireless Field Bus solution. Wireless technologies can be found in all the corners of the globe from mobile phones to wireless hotspots in airports, where travelers can browse the Internet. As a result, wireless has lowered installation costs while providing a level of connectivity freedom never before seen. The Andover Continuum Wireless Infinet solution now introduces these cost savings and ease of installation benefits to the world of building automation.

Lower Costs and Solve Wiring Challenges

Wiring a field bus can be very labour intensive. Many field buses require controllers to be wired serially in a daisy chain, increasing the run lengths. Furthermore, certain controller locations may be extremely hard to wire, yet easily accessed by wireless. Wireless solves these challenges while greatly reducing the labour required for connectivity.

With wireless controls, installation/wiring costs and challenges can be significantly reduced.



2.4 GHz Wireless Mesh Provides High Reliability

Like a spider web, a wireless mesh becomes stronger with every node that is added to the system. If a node becomes unreachable, the mesh simply heals itself by connecting to the next nearest neighbours. The wireless nodes operate at the 2.4 GHz wireless frequency, which has been approved for use in countries worldwide. The transmission level of each node can be attenuated by the software for use in radio sensitive environments. The software can also be used to select channels for systems with multiple communication buses.

Wireless Mesh Networks provide the 24/7 reliability required for building automation systems.

ZigBee Ready

The TAC wireless mesh solution is based on the same IEEE 802.15.4 standard that the ZigBee Alliance is using in their evolving standard. As a result, TAC has made all of their wireless products ready for ZigBee compliant firmware. Since all TAC wireless products are flash upgradeable, transitioning to ZigBee when the standard is finalised will be easy. TAC's parent company, Schneider Electric, is a member of the ZigBee Alliance. Schneider's membership in this organisation reflects the direction of TAC.

Prepare for the future today.

ZigBee™ Alliance
Wireless Control That Simply Works

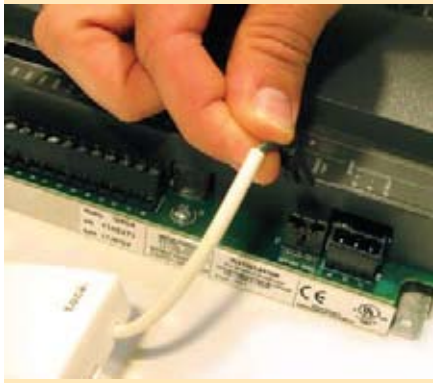
Full Family of Wireless Infinet Controllers

Any one of the Andover Continuum i2 Infinet controllers can become part of a wireless mesh with wireless firmware. As a wireless Infinet controller, these controllers support the same objects and Plain English programmes as when they are wired to an Infinet RS-485 field bus. An Ethernet level controller with wireless firmware, such as a bCX1, is required to manage the wireless network. Go wireless without sacrificing Continuum compatibility.

Small, Attractive Wireless Adapter/Repeater

Andover Continuum i2 Infinet controllers communicate wirelessly when a Wireless Adapter is connected to its service port. The adapter itself contains the wireless antenna and is connected to the controller with a cable which allows for flexible mounting options. The adapter is plenum rated and may be mounted outside the controller enclosure or within an architectural space. The adapter is light and mounts with a single screw, adhesive tape, or tie wrap.

It's what you don't see that makes the difference.



Simple Power Connections

The adapter is powered directly from the 3.3V power feeds of the controller's service port. Power kits are available to run the adapter as a repeater to bridge controllers that are far apart. Adding the Wireless Adapter is a snap. A maximum of 32 wireless nodes are supported per controller.

Amplified Output

The Wireless Adapters/Repeaters have an amplified output to their onboard antenna, with a maximum of +6dBm power to the antenna and a maximum radiated power output of +10dBm. The TAC Wireless Adapters/Repeaters are capable of delivering the strongest output permitted by FCC and CE regulations. The power output levels generated by each node may be attenuated through software to either meet the maximum power requirements of the local site or to balance the wireless network.

Extra power to go the distance.

Wireless Maintenance Tool for Mesh Optimisation

Visualise your wireless mesh with the Wireless Maintenance Tool. The maintenance tool automatically discovers all wireless adapters and repeaters while showing the signal strength of each node, its neighbouring table and the line quality of each connection. The graphic display allows you to arrange the wireless nodes over a floor plan graphic, making it easy to see if the placement of the wireless adapter needs to be modified or if repeaters need to be added.

Easily setup and manage your wireless network from your desktop.

Feature History Table

Wireless Infinet Field Bus Solution	1.0
Controllers	
i2 Infinet Controllers with v3.5 firmware (P/N with –WL extension)	•
Supports all objects and functionality of the equivalent wired i2 Infinet Controllers (e.g. schedules, alarms, Plain English programmes)	
Wireless Adapters/Repeaters	
Small, attractive wireless mesh antenna suitable for mounting in architectural space	•
Plenum rated	•
Complies with IEEE 802.15.4 wireless mesh standard	•
ZigBee ready hardware with flashable firmware to support future ZigBee compliant version	•
All settings are software settable (channel numbers, power levels, PAN IDs)	•
Amplified power output to antenna settable up to +6dBm gain	•
Adapter power is supplied directly by the controller's service port	•
Repeater power is supplied by optional repeater power supply	•
Wireless Maintenance Tool	
Monitor the health of the wireless mesh network	•
Adjust channel numbers, power levels, and PAN IDs	•
Graphically view node connectivity levels and line qualities over imported floor plan or map	•
View neighbouring tables showing the line qualities to each	•

Wireless adapter 25 ft (7.5m) cable	**WL-ADPR-25**
Wireless adapter 6ft (1.85m) cable	**WL-ADPR-6**
Wireless repeater power supply	**WL-RPTR-PS**
Wireless maintenance tool kit	**WL-WMT**

BACnet Controllers

Andover Continuum BACnet Family of Controllers

BACnet that is Intelligent . . . At Every Level

Open standards provide building owners with flexibility and choice when selecting building automation technology. The BACnet open standard provides a universal model for creating building automation systems that can interoperate with one another. The Andover Continuum system takes full advantage of BACnet's data sharing, trending, scheduling, alarming, and device management services. From the BACnet Operator's Workstation, to the Building Controller, to the simplest terminal controller, the Andover Continuum BACnet family of products provides the highest level of interoperability at every level.

Andover Continuum is a Native BACnet System

To harness the full benefits of BACnet, it is important that the system is native BACnet throughout. Andover Continuum uses BACnet communications at every level of the system. The Andover Continuum system has BACnet Operator Workstations (B-OWS) and the BACnet Building Controllers (B-BC), which are used for system management and BACnet message routing, but these devices are only a part of the whole Andover Continuum BACnet solution.

It is very important to carry BACnet to a full line of intelligent BACnet MS/TP controllers that contain and run their own programmes, BACnet trends, BACnet schedules, and BACnet alarms, thereby increasing your processing power and reliability. If a communications wire is cut, you can be assured that the air handler, chiller, and fan coil unit will remain running under the appropriate schedule, trending the data and storing alarms. Furthermore, your interoperability is greatly increased while lowering installation costs. For example, the same BACnet MS/TP network that is being used by the Andover Continuum BACnet field controllers may be used by a third party supplier of air handling units with integral VSDs.

In addition, the open architecture of Andover Continuum permits Andover Continuum's access controllers, lighting controllers, digital video recorders, and 200+ protocol drivers to work with native BACnet Devices from TAC and other third party BACnet manufacturers.

The Andover Continuum bCX1 Series is a series of Native BACnet routers and controller/routers, which head up the BACnet family of Continuum controllers. These controllers reside at the network level and route BACnet messages between BACnet/IP, BACnet over Ethernet, and MS/TP networks. They can also serve as BACnet Broadcast Management Devices (BBMD), allowing for routing of messages between IP networks.

There are two basic bCX1 models: the bCX1-R (Router Only) and the bCX1-CR (Controller/Router). The bCX1-R model provides all the functionality to route messages between BACnet networks, and the bCX1-CR is a full-function BACnet Building Controller (B-BC). The bCX1-CR performs the routing functions of the bCX1-R with the additional power of a programmable controller with expansion I/O capabilities.

- *B-BC – BACnet Building Controller available in Router-only and Router/ Controller combination models*
- *Supports 18 BACnet object types including Trends, Schedules, Calendars, and Loops*
- *Native BACnet/IP and MS/TP communications for interoperability to third party systems*
- *10/100 Ethernet port*
- *BACnet Broadcast Message Device (BBMD) support*
- *Expandable for local I/O and display using xP Expansion Modules*
- *Advanced Flash Memory provides utmost reliability – stores application programme, operating system, and run-time data*
- *Flash memory allows easy online software updates*
- *Support for custom Embedded Web Server*
- *SNMP Monitoring*
- *SNMP Alarming Option*
- *Support for BACnet Trend object*
- *Support for BACnet Calendar and Schedule objects*
- *BTL Listed B-AAC Controller with local Trends*

Technical Specifications	
Power:	24VAC, +10% -15%, 50/60 Hz, 12-28 VDC auto sensing
Operating Environment:	0 to +49°C, 10–95% RH (non-condensing)
Dimension:	139mm (H) x 213mm (W) x 62mm (D)
Battery:	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.
Memory:	32MB SDRAM, 16MB FLASH

bCX1-R-64 **BCX1-R-64**

Router only, 64 MS/TP nodes

bCX1-CR-0 0 NODE **BCX1-CR-0**

Controller/Router, 0 Node Support, BACnet

bCX1-CR-8 8 NODE **BCX1-CR-8**

Controller/Router, 8 Node Support, BACnet

bCX1-CR-32 32 NODE **BCX1-CR-32**

Controller/Router, 32 Node Support, BACnet

bCX1-CR-64 64 NODE **BCX1-CR-64**

Controller/Router, 64 Node Support, BACnet

bCX1-CR-127 127 NODE **BCX1-CR-127**

Controller/Router, 127 Node Support, BACnet

Compliance with ASHRAE 135-2004 (protocol revision 4)

The Andover Continuum system is up-to-date with the latest advances in the ASHRAE BACnet standard. BACnet is in its 4th protocol revision since its introduction in 1995. The ASHRAE 135-2004 BACnet standard calls for BACnet vendors to update their BACnet controller to account for Scheduling and Trending improvements as well as other background communications. Andover Continuum BACnet controllers adhere to these changes and all are BTL listed.

b3920 System Controller

The BACnet b3920 controller is a stand-alone microprocessor-based system controller for DDC control. Capable of monitoring, controlling, scheduling and logging modular systems, the b3920 contains an I/O expansion port to meet additional point count needs and an optional display with keypad for local viewing of point values and setpoint modifications. Up to 127 controllers can be networked on one bCX1 controller.

- *16 Universal inputs*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *8 Digital Form C relay-based outputs with overrides*
- *8 Analogue outputs with overrides*
- *I/O expansion port*
- *Removable terminal blocks*
- *Local service port*
- *Real time clock*
- *Optional LCD display (4 line x 16 character) with keypad is available separately*
- *CE approved*

Technical Specifications	
Power:	115-230VAC, 50/60Hz @ 45VA
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimensions:	330mm (H) x 271mm (W) x 69mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	512KB RAM, 512KB FLASH

Inputs/Outputs	
Universal Input (12 bit):	Supervised, 0-10VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form C Relay-based Output:	SPDT 24VAC/30VDC @ 3A, 0.1 sec for PWM control
Analogue Output (8 bit):	0-10VDC or 4-20mA

b3920 without built-in LCD display and keypad	**b3920**
b3920 with built-in LCD display and keypad	**b3920-D**
Remote LCD display with keypad (max. distance 3m)	**xP-Display**

b3600 Series and b3800 Series Local Controllers

The BACnet b3600 and b3800 are stand-alone microprocessor-based local controllers for DDC control capable of monitoring, controlling, scheduling and logging modular systems. Up to 127 controllers can be networked on one bCX1 controller.

Features b3800/b3804

- *8 Universal inputs*
- *Fixed terminal blocks*
- *Local service port*
- *4 Analogue outputs (b3804 only)*
- *CE approved*
- *8 or 4 Digital Form C relay-based outputs*
- *1 Room/Smart Sensor input*

Features b3608/b3624

- *8 or 24 Universal inputs*
- *Fixed terminal blocks*
- *Local service port*
- *No outputs*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 25VA or 12-28VDC
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimension:	229mm (H) x 153mm (W) x 54mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB RAM, 128KB FLASH

Inputs/Outputs	
Universal Input (10 bit):	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form C Relay-based Output:	SPDT 24VAC/30VAC @3A, 0.1 sec for PWM control
Analogue Output (8 bit):	0-10VDC

	Universal Inputs	Room Sensor Input	Form C Relay Outputs	Analogue Outputs	Local Service Port	Part Number
b3800	8	1	8	-	✓	b3800
b3804	8	1	4	4	✓	b3804
b3608	8	-	-	-	✓	b3608
b3624	24	-	-	-	✓	b3624

b3810 Series Local Controllers

The BACnet b3810 Series are stand-alone microprocessor-based local controllers for DDC control, capable of monitoring, controlling, scheduling and logging modular systems. The b3810 offers the same features as the b3800, plus an I/O expansion port, built-in overrides for manual control of each output and an optional display with keypad for local information control (to be connected to an I/O expansion port). Up to 127 controllers can be networked on one bCX1 controller.

- *8 Universal inputs*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *8 or 4 Digital Form C relay-based outputs with overrides*
- *4 Analogue outputs with overrides*
- *I/O expansion port*
- *Removable terminal blocks*
- *Local service port*
- *Real time clock*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 25VA or 12-28VDC
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimensions:	227mm (H) x 184mm (W) x 54mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	256KB RAM, 256KB FLASH

Inputs/Outputs	
Universal Input (12 bit):	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form C Relay-based Output:	SPDT 24VAC/30VDC @3A, 0.1 sec for PWM control
Analogue Output (8 bit):	0-10VDC

	Universal Inputs	Room Sensor Input	Form C Relay Outputs	Analogue Outputs	I/O Expansion Port	Local Service Port	Part Number
b3810	8	1	8	-	✓	✓	b3810
b3814	8	1	4	4	✓	✓	b3814

Optional

Remote LCD Display - with Keypad (max. distance 3m)	**xP-Display**

b3850 Series Terminal Controllers

BACnet b3850 Series terminal controllers are stand-alone microprocessor-based controllers used for cost-effective DDC control of individual terminal units. They are capable of monitoring, controlling, scheduling and logging modular systems. Up to 127 controllers can be networked on one bCX1 controller.

- *Ideal for VAV applications where external damper actuators are used*
- *Contains an I/O expansion port for the addition of up to two expansion modules*
- *Service port provided*
- *DIN-rail or panel mounting*
- *CE approved*
- *RTC on b3851*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 20VA
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimensions:	139mm (H) x 207mm (W) x 62mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB SRAM, 1MB FLASH

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Airflow Sensor Input:	0 - 500Pa
Room Sensor Input:	0°C to +41°C
Form A Triac-based Output:	SPST 24VAC/VDC @3A, 0.1 sec for PWM control

	Universal Inputs	Airflow Sensor Inputs (0-500Pa)	Room Sensor Input	Form A Relay Outputs	Form K Tri-state Relay Output	Expansion Port	Part Number
b3850	4	1	1	3	1	✓	b3850
b3851	4	-	1	3	1	✓	b3851
b3853	4	2	1	3	1	✓	b3853

Optional

Remote LCD Display - with Keypad (max. distance 3m)	**xP-Display**

b3865-V/b3866-V Controller

The BACnet b3865-V and b3866-V are unique, low cost VAV box controllers that come equipped with a built-in damper actuator to streamline hardware installation and reduce commissioning time. These stand-alone controllers are capable of monitoring, controlling, scheduling and logging modular systems. Service and Smart Sensor ports are provided. Up to 127 controllers can be networked on one bCX1 controller.

- *4 Universal inputs*
- *1 Airflow sensor*
- *3 Form A triac-based outputs*
- *1 Integrated damper actuator*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *CE approved*

The b3866-V model is identical to the b3865-V, with the exception that it also offers 2 analogue outputs to control reheat valves, lighting ballast control, position feedback, etc.

Technical Specifications	
Power:	24VAC, 50/60Hz @ 10VA
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimensions:	197mm (H) x 159mm (W) x 63mm (D)
Battery:	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Airflow Sensor Input:	0-250Pa (0-1" WC)
Room Sensor Input:	0°C to +41°C
Form A Triac-based Output:	SPST 24VAC @ 0.5A (minimum 30mA), 0.1 sec for PWM control
Analogue Output **(b32866-v only):**	0-10VDC, 5mA maximum
Damper Actuator:	Shaft Torque 6Nm. Shaft Diameter 1/2" (12.7mm) with 3/8" (9.5mm) adaptor

A separate isolation transformer must be used for each controller.

b3865-V VAV Controller	**b3865-V**
b3866-V VAV Controller	**b3866-V**

b3867 Terminal Controller

The BACnet b3867 is a compact terminal controller providing low cost DDC controls of package units, fan coil units, heat pumps and small AHU's that require both digital and analogue outputs. The unit is provided with a service port and an input for a Smart Sensor, TAC's low cost programmable user interface. Up to 127 b3867 controllers can be networked on one bCX1 controller.

- *4 Universal Inputs*
- *1 Room sensor input, which supports Continuum's Smart Sensor*
- *5 Form A triac-based outputs*
- *2 Analogue outputs*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 4VA
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimensions:	157mm (H) x 89mm (W) x 64mm (D)
Battery:	Replaceable, non-rechargeable lithium battery providing 5 years accumulated power failure back-up
Memory:	128KB SRAM, 1MB FLASH

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Room Sensor Input:	0°C to +41°C
Form A Triac-based Output:	SPST 24VAC/VDC @ 0.5A (minimum 30mA), 0.1 sec for PWM control
Analogue Output:	0-10VDC, 5mA maximum

A separate isolation transformer must be used for each b3867 controller.

b3867 Terminal Controller **b3867**

b3885-V VAV Controller

The b3885-V is a unique low cost VAV box controller complete with a built-in actuator to simplify hardware installation and reduce commissioning time. This stand-alone controller is capable of alarming, scheduling and logging modular systems. Up to 127 controllers can be networked on one bCX1 controller.

- *2 Universal inputs*
- *1 Airflow sensor input*
- *2 Form A triac-based outputs*
- *1 Integrated damper actuator*
- *Service port provided*
- *CE approved*

Technical Specifications	
Power:	24VAC, 50/60Hz @ 10VA
Operating Range:	0°C to +49°C (non-condensing)
Dimensions:	197mm (H) x 159mm (W) x 63mm (D)
Battery:	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.

Inputs/Outputs	
Universal Input:	Supervised, 0-5VDC or 0-20mA, Temperature (-34°C to +110°C) digital, counter (4Hz)
Airflow Sensor Input:	0-250Pa (0-1" WC)
Form A Triac-based Output:	SPST 24VAC @ 0.5A (minimum 30mA), 0.1 sec for PWM control
Damper Actuator:	Shaft Torque 6Nm. Shaft Diameter 1/2" (12.7mm) with 3/8" (9.5mm) adaptor

b3885-V VAV Controller **b3885-V**

b3887 Series Terminal Controllers

The BACnet b3887 is a fully programmable, low cost, general purpose terminal controller. With its unique mix of three universal inputs, one Smart Sensor/room sensor input, four triac outputs and one relay output, the b3887 can be easily configured to control Heat Pumps, Fan Coils, or AC units. Use the b3887 for direct control of fans, staged heating and cooling and monitoring of room temperature, outside air temperature, return air temperature or occupancy status. The b3887 is compact so it can be installed in tight locations with three mounting screws and its removable terminal connectors allow for easy servicing.

- *Compact Terminal Controller Provides Low Cost Fan Coil and Heat Pump Control*
- *Three Universal Inputs and One Smart Sensor/Room Sensor Input*
- *Four Form A Triac Outputs, One Form A Relay, 277 VAC@3A*
- *Non-Volatile Flash Memory Provides Utmost Reliability – Stores Both Application Programme and Operating System*
- *Flash Memory Allows Easy On-Line Software Updates*
- *Removable Terminal Blocks for Easy Serviceability*
- *View and Modify Information with Optional Smart Sensor Display*
- *Local On-Board Service Port*
- *Typical Applications:*
  - *Fan Coil Units*
  - *Heat Pumps*
  - *Chilled Beams*

Technical Specifications	
Power:	b3887: 24 VAC, +10% -15%, 50/60 Hz b3887-L-xxx: 115/230 VAC, +10% -15%,50/60 Hz
Operating Range:	0°C to +49°C 10–95% RH (non-condensing)
Dimensions:	b3887: 112mm (H) x 130mm (W) x 30mm (D)
	b3887-L-230: 111mm (H) x 186mm (W) x 59mm (D)
	b3887-L-230-C: 149mm (H) x 206mm (W) x 70mm (D)
Memory:	512K SRAM, 1MB FLASH

b3887 Controller **b3887**

24v supply

b3887-L-230 Controller **b3887-L-230**

230v supply

b3887-L-230-C Controller **b3887-L-230-C**

230v supply with enclosure

b3 xP Expansion I/O Modules

The BACnet (b3) "plug-in" expansion modules provide a convenient, low cost, and flexible means to add additional input and output points to Continuum's distributed application controllers. Up to two modules (max.) plus a remote mounted (3m max.) display module can be powered directly from any BACnet Controller, maximum 180mA of power available. An external power supply can NOT be used to add additional modules.

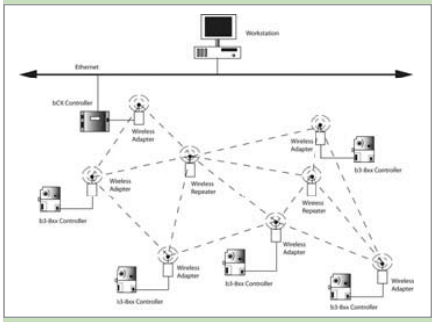
- *Only the following controllers can accommodate b3 modules: b3920, b3810, b3814, b3850, b3853, bCX1-CR and ACX*
- *IP20 protection*
- *CE approved*

Technical Specifications	
Dimensions:	82mm (H) x 180mm (W) x 40mm (D)

Module	Description	Contact Rating	Power Consumption
Digital Inputs			
xPD18	8 digital inputs for dry contacts, which may also be configured as 140Hz counter inputs	0-5V, 140Hz	50mA
Analogue Outputs			
xPAO2	2 analogue outputs, 2 position potentiometer with no software feedback	0-10V, 0-20mA	80mA
xPAO4	4 analogue outputs, 2 position potentiometer with no software feedback	0-10V, 0-20mA	120mA
Digital Outputs			
xPDO2	2 digital Form C (SPDT) Relay outputs, 0.1 sec for PWM control	24VAC/30VDC @ 3A	60mA
xPDO4	4 digital Form C (SPDT) Relay outputs, 0.1 sec for PWM control	24VAC/30VDC @ 3A	100mA
xPUI4	4 universal inputs • Range 0 - 5.115VDC • Temp -34°C to +110°C • Counter 4Hz • Supervised and digital	24VAC/30VDC @ 3A	125mA
Bi-directional Models			
xPBD4	3 universal inputs • 1 UI/140Hz counter • 4 digital form C (SPDT) Relay outputs	24VAC/30VDC @3A	125mA
xPBA4	3 universal inputs • 1 UI/140Hz counter • 4 analogue outputs 0-10VDC (no 0-20mA) with overrides	24VAC/30VDC @3A	60mA
Local Display Module			
xPDisplay	4 lines x 16 char, remote mountable @ max. 3m	N/A	60mA

b3 DI8 Digital Input Module	**xPDI8**
b3 AO2 Analogue Output Module	**xPAO2**
b3 AO4 Analogue Output Module	**xPAO4**
b3 DO2 Digital Output Module	**xPDO2**
b3 DO4 Digital Output Module	**xPDO4**
b3 Universal Input Module	**xPUI4**
b3 Local Display Module (900mm cable)	**xP-Display**
b3 Local Display Module (3m cable)	**xP-Display-10**
4UI/4DO* Expansion Module	**xPBD4**
4UI/4AO* Expansion Module	**xPBA4**

**bCX1-CR-XX only*



Product Overview

Andover Continuum is the first BACnet system to offer a Wireless BACnet Field Bus solution. Wireless technologies can be found in all the corners of the globe from mobile phones to wireless hotspots in airports, where travelers can browse the Internet. As a result, wireless has lowered installation costs while providing a level of connectivity freedom never before seen. The Andover Continuum Wireless BACnet solution now introduces these cost savings and ease of installation benefits to the BACnet world of open protocol building automation.

Lower Costs and Solve Wiring Challenges

Wiring a field bus can be very labour intensive. Many field buses require controllers to be wired serially in a daisy chain, increasing the run lengths. Furthermore, certain controller locations may be extremely hard to wire, yet easily accessed by wireless. Wireless solves these challenges while greatly reducing the labour required for connectivity.

With wireless controls, installation/wiring costs and challenges can be significantly reduced.

2.4 GHz Wireless Mesh Provides High Reliability

Like a spider web, a wireless mesh becomes stronger with every node that is added to the system. If a node becomes unreachable, the mesh simply heals itself by connecting to the next nearest neighbours. The wireless nodes operate at the 2.4 GHz wireless frequency, which has been approved for use in countries worldwide. The transmission level of each node can be attenuated by the software for use in radio sensitive environments. The software can also be used to select channels for systems with multiple communication buses.

Wireless Mesh Networks provide the 24/7 reliability required for building automation systems.

ZigBee Ready

The TAC wireless mesh solution is based on the same IEEE 802.15.4 standard that the ZigBee Alliance is using in their evolving standard. As a result, TAC has made all of their wireless products ready for ZigBee compliant firmware. Since all TAC wireless products are flash upgradeable, transitioning to ZigBee when the standard in finalised will be easy. TAC's parent company, Schneider Electric, is a member of the ZigBee Alliance. Schneider's membership in this organisation reflects the direction of TAC.

Prepare for the future today.

ZigBee™ Alliance
Wireless Control That Simply Works

Full Family of Wireless BACnet B-AAC Controllers

Any one of the BTL listed Andover Continuum BACnet controllers can become part of a wireless mesh with wireless firmware. As a wireless BACnet controller, these controllers support the same BACnet objects and services as when they are wired to an MS/TP field bus and meet the requirements of a BACnet Advanced Application Controller (B-AAC) with support for BACnet trends per ASHRAE 135-2004. An Ethernet level controller with wireless firmware, such as a bCX1, is required to manage the wireless network.

Small, Attractive Wireless Adapter/Repeater

Andover Continuum BACnet controllers communicate wirelessly when a Wireless Adapter is connected to its service port. The adapter itself contains the wireless antenna and is connected to the controller with a cable which allows for flexible mounting options. The adapter is plenum rated and may be mounted outside the controller enclosure or within an architectural space. The adapter is light and mounts with a single screw, adhesive tape, or tie wrap.

It's what you don't see that makes the difference.

Simple Power Connections

The adapter is powered directly from the 3.3V power feeds of the controller's service port. Power kits are available to run the adapter as a repeater to bridge controllers that are far apart. Adding the Wireless Adapter is a snap.

Amplified Output

The Wireless Adapters/Repeaters have an amplified output to their onboard antenna, with a maximum of +6dBm power to the antenna and a maximum radiated power output of +10dBm. The TAC Wireless Adapters/Repeaters are capable of delivering the strongest output permitted by FCC and CE regulations. The power output levels generated by each node may be attenuated through software to either meet the maximum power requirements of the local site or to balance the wireless network.

Extra power to go the distance.

Wireless Maintenance Tool for Mesh Optimisation

Visualise your wireless mesh with the Wireless Maintenance Tool. The maintenance tool automatically discovers all wireless adapters and repeaters while showing the signal strength of each node, its neighbour table and the line quality of each connection. The graphic display allows you to arrange the wireless nodes over a floor plan graphic, making it easy to see if the placement of the wireless adapter needs to be modified or if repeaters need to be added.

Easily setup and manage your wireless network from your desktop.

Feature History Table

Wireless BACnet Field Bus Solution	1.0
Controllers	
17 BACnet b3 Controllers with v4.5 firmware (P/N with –WL extension)	•
Complies with ASHRAE 135-2004 (protocol revision 4)	•
Adheres to BACnet Application Specific Controller (B-AAC) Profile	•
Supports BACnet Trend Log Object	•
Supports BACnet Loop Object	•
Supports BACnet Backup and Restore service	•
Wireless Adapters/Repeaters	
Small, attractive wireless mesh antenna suitable for mounting in architectural space	•
Plenum rated	•
Complies with IEEE 802.15.4 wireless mesh standard	•
ZigBee ready hardware with flashable firmware to support future ZigBee compliant version	•
All settings are software settable (channel numbers, power levels, PAN IDs)	•
Amplified power output to antenna settable up to +6dBm gain	•
Adapter power is supplied directly by the controller's service port	•
Repeater power is supplied by optional repeater power supply	•
Wireless Maintenance Tool	
Monitor the health of the wireless mesh network	•
Adjust channel numbers, power levels, and PAN IDs	•
Graphically view node connectivity levels and line qualities over imported floor plan or map	•
View neighbour tables showing the line qualities to each neighbour	•

Wireless adapter 25 ft (7.5m) cable	**WL-ADPR-25**
Wireless adapter 6 ft (1.85m) cable	**WL-ADPR-6**
Wireless repeater power supply	**WL-RPTR-PS**
Wireless maintenance tool kit	**WL-WMT**

Network & Communications

i2 Infilink 200

The i2 Infilink 200 is an electronic repeater and 5 port active hub in one device. Each RS485 output has the drive capability of up to 1200m or 31 separate devices. The Infinet field bus system can accommodate both Infinet and Infinet II controllers.

- *1 x RS485 input*
- *4 x RS485 outputs*
- *1 x RS232 output for short haul modems*
- *LED indication on all ports for troubleshooting*
- *AC and DC versions available*
- *CE approved*
- *Not for use with I/O Modules*

Power:	115/230VAC (switch selectable) @ 2.5VA or 24VDC @ 1W
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	210mm (H) x 191mm (W) x 59mm (D) (with enclosure)

i2200 with backplate and cover plate only - AC version	**I2200AC-OP**
i2200 with backplate and cover plate only - DC version	**I2200DC-OP**
i2200 with enclosure and cover plate - AC version	**I2200AC**
i2200 with enclosure and cover plate - DC version	**I2200DC**
DIN Rail Mounting Kit	**DIN-MTG-KIT**

i2 Infilink 210

The i2 Infilink 210 is a fibre optic repeater for use with the Infinet network. The Infinet field bus system can accommodate both Infinet and Infinet II controllers.

- *1 x RS485 input*
- *2 x duplex fibre optic 62.5/125 outputs*
- *Allows point-to-point chaining or stacking for use in hub applications*
- *Ideal in areas with high electrical noise interference*
- *LED indication on all ports for troubleshooting*
- *AC and DC versions available*
- *CE approved*
- *Not for use with I/O Modules*

Power:	115/230VAC (switch selectable) @ 2.5VA or 24VDC @ 1W
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	175mm (H) x 155mm (W) x 50mm (D) (with enclosure)

i2210 with enclosure - AC version	**I2210AC**
i2210 with enclosure - DC version	**I2210DC**
DIN Rail Mounting Kit	**DIN-MTG-KIT**

b-Link (Copper)

The b-Link electronic repeaters are multi-port active hubs for the BACnet MS/TP field bus, designed to transmit RS-485 signals beyond the 4000-foot (1.2 km) limitation.

- *1 x RS-485 input*
- *4 x RS-485 outputs*
- *1 x RS-232 output for short haul modems*
- *LED indication on all ports for troubleshooting*
- *AC and DC versions available*
- *CE approved*

Power:	115/230VAC (switch selectable) @ 2.5VA or 24VDC @ 1W
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	210mm (H) x 191mm (W) x 59mm (D) (with enclosure)

b-Link with backplate - AC version	**B-LINK-AC-OP**
b-Link with backplate - DC version	**B-LINK-DC-OP**
b-Link with backplate & enclosure - AC version	**B-LINK-AC**
b-Link with backplate & enclosure - DC version	**B-LINK-DC**
DIN Rail Mounting Kit	**DIN-MTG-KIT**

b-Link (Fibre)

The b-Link-F has one RS-485 port & two duplex fibre ports, and allows point-to-point chaining or stacking for use in hub applications. Using two b-Link-Fs with fibre, you can connect BACnet between two buildings without worry of noise interference. Data transmission speeds are selectable from 9600 to 76.8 baud.

- *1 x RS-485 input*
- *2 x duplex fibre optic 62.5/125 outputs*
- *Allows point-to-point chaining or stacking for use in hub applications*
- *Ideal in areas with high electrical noise interference*
- *LED indication on all ports for troubleshooting*
- *AC and DC versions available*
- *CE approved*

Power:	115/230VAC (switch selectable) @ 2.5VA or 24VDC @ 1W
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	175mm (H) x 155mm (W) x 50mm (D) (with enclosure)

b-Link fibre with backplate & enclosure - AC version	**B-LINK-F-AC**
b-Link fibre with backplate & enclosure - DC version	**B-LINK-F-DC**
DIN Rail Mounting Kit	**DIN-MTG-KIT**

Controller OPC Server

The TAC OPC Server allows third party OPC-based client applications to access data in the Continuum and Infinity controllers through an Ethernet network.

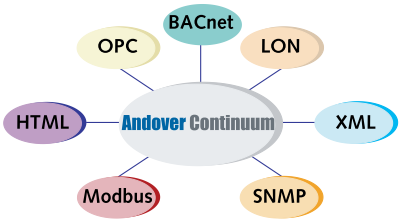
OPC, an industry-standard protocol, provides seamless open communciations between different manufacturers' devices and databases. It eliminates the need for custom driver development and resulting driver conflicts between devices and offers a comprehensive view of both environmental and process data on a "single" client workstation.

From an OPC-compatible client application it is possible to:

- *View points from Continuum field controllers*
- *Poll data for history collection and trending*
- *Change parameters*
- *Adjust setpoints*
- *Control outputs*

The TAC OPC Server is compatible with many third party OPC client applications, including Wonderware™, Matrikon™, Intellution™, Osi™, etc.

Controller OPC Server	CTRL-OPC-SRVR-USB



INTERFACES

- Standard Protocol Drivers
- Air Handling Units
- Battery Monitoring Systems
- Building Automation Systems
- Chillers
- Fire Systems
- Fume Hood Controls
- Heat Pump/Unit Ventilators
- Intercom Systems
- Leak Detection Systems
- Lighting Controllers
- Package Environmental Units
- Paging Systems
- Power Monitoring
- Programmable Logic Controllers (PLCs)
- Pumps/Motors
- Security Systems
- Sensors/Meters
- Telephone Switches/Systems
- UPS Systems
- VCR Controllers
- Variable Speed Drives
- Video Switches
- Miscellaneous Drivers

Third Party Communications Interfaces and Protocols

TAC meets today's need for open systems and total integrated building control with industry-standard interfaces, such as BACnet and OPC, plus a wide range of third party communications interfaces called drivers. Using either one, you can directly communicate with third party devices in your building, such as fire panels, air handling units, chillers, variable speed drives, video switches, and other similar equipment.

The advantages of using a driver as a software interface are numerous. No duplication of computer hardware or costly third party software is needed to communicate with the device. In addition, an Andover Continuum workstation operator can interact directly with the device without having to exit the software and then log in to a separate software interface for the device. The ability to access the alarm and point information of the third party device in the Andover Continuum system provides a transparent "look and feel" of an entire system all in one package.

The tables on the following pages are designed to give an overview of the XDrivers currently available. The drivers are organized into general categories with descriptions of the equipment they interface to and their corresponding applications.

The driver types listed are defined as:

X - XDriver

Driver compatibility to controllers is defined by three columns:

Infinity Compatible (SX8000)

- *CX 9200*
- *Eclipse*
- *CMX 240*

1st Generation Continuum Compatible

- *NetController*
- *Eclipse*
- *CX9924*
- *CX9200 (upgraded to be Continuum compatible)*

2nd Generation Continuum Compatible

- *NetController II*
- *ACX Series Access Controllers (Models 5720 & 5740)*
- *BACnet bCX1*
- *Infinet bCX1*

For further information about currently available drivers, refer to the TAC ExchangeOnline Global website **http://extranet.tac.com**

Third Party Interfaces

STANDARD PROTOCOLS

Besides the custom point-to-point interfaces listed, Andover Continuum also offers many standard interfaces designed to facilitate interoperability among many different devices. These standard protocols include BACnet, LON, Modbus, and an OPC Server package.

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
TAC	XDriver Filter	X	E01-0210-153	✓	✓		Simple serial port filter to allow non-printable characters to be accessed by Plain English.
BACnet	Ethernet (IP)	X	E01-0120-199	✓	✓	✓	The BACnet/IP XDriver is a general purpose BACnet/IP interface between the CX master controllers and any BACnet-compatible device supporting ANNEX J BACnet/IP of the ANSI/ASHRAE Standard 135-2001. It can be configured as a BACnet Client or a BACnet Server and will comply with the BACnet BIBB B-ASC (BACnet Application Specific Controller). The PICS statement is included in the manual.
BACnet	Ethernet (Non IP)	X	E01-0120-197	✓	✓		General purpose BACnet/Ethernet interface. Conforms with the older BACnet Standard 135-1995. This XDriver does not use IP; it communicates using the physical Ethernet address (MAC address).
BACnet TAC	PTP/RS-232	X	E01-0210-184	✓	✓		Acts as a gateway from an Andover CX TAC controller to other BACnet controllers. This product conforms to Class 1 specification.
Echelon	LonMark	X	E01-0210-190	✓	✓		LonMark-compliant interface, used to interface to various intelligent devices on a common bus. Requires additional Andover interface hardware for Eclipse CX 9400 or via I/O bus on Continuum NetController.
Modicon Modbus RTU Protocol (Master)	Various	X	E01-0210-118	✓	✓	✓	Commonly used protocol supported by many PLC and equipment manufacturers. Behaves as a Master and uses Poll on demand extraction of data on an RS232 or RS485 network. Most function codes are supported.
Modicon Modbus TCP/IP	Various	X	E01-0210-215		✓	✓	Commonly used protocol supported by many PLC and equipment manufacturers. Uses Poll on demand extraction of data. Most function codes are supported.
OPC Controller Server TAC	Networked Controllers	N/A	01-3021-432	✓	✓		Software package that allows data from Andover controllers to be shared with any third party OPC-compatible client package. Supports Data Access Specifications 1.0 and 2.0. Refer to page 3 of the Network and Communications section of this catalogue.
XML	Various	X	E01-0210-236			✓	The XML XDriver allows a Continuum 2nd generation controller to act as a TCP client sending XML commands over a TCP/IP connection. This XDriver is typically used when interfacing to CCTV equipment for camera switching.

AIR HANDLING UNITS

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Denco Ltd	CIU Monitrol Protocol	X	E01-0210-142	✓	✓		The CIU can connect up to 62 AHU controllers such as the Beta 2 Controller or Serial Data Card (SDC). Continuous polling of all data.
McQuay (Snyder General)	Applied Rooftop Units	X	E01-0210-182	✓	✓		Supports Open Protocol Data Communications (Snyder General) V1.3 or Microtech Rooftop Open Protocol V1.4. Read/Write.
Mammoth	AHU With Automated Logic Controllers	X	E01-0210-118	✓	✓	✓	Use Modbus RTU XDriver for interface.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

Third Party Interfaces

BATTERY MONITORING SYSTEMS

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Newport Data Systems	Cell Watch Battery Monitoring	X	E01-0210-175	✓	✓		Full voltage, current and internal resistance Systems Battery Monitoring. Monitoring of battery cells, through a network of Control Units and Data Collection Modules.

BUILDING AUTOMATION SYSTEMS

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
American Automatrix	PHP Sage & Star	X	E01-0210-121	✓	✓		Allows monitoring and change of data. Connects Automatrix Controllers via RS-232 or up to 73 devices on RS-485.
American Automatrix	PUP Solo Controllers	X	E01-0210-128	✓	✓		Allows monitoring and change of all Solo points. Automatrix Controllers Connects via RS-485 to many devices (up to 65535).
TAC	AC256M+, AC8	X	E01-0210-167	✓	✓		Connection to C Port allowing monitoring and setting of all points.
TAC	CX Control-lers	X	E01-0210-211	✓	✓		Simple serial driver to link two separate Continuum Systems.
TAC	CX Control-lers	X	E01-0210-212		✓		Simple TCP/IP driver to link two separate Continuum Systems.
Dutec Data Acquisition & Control Systems	I/O Plexor Remote	X	E01-0210-198	✓	✓		Allows remote I/O configuration, control, and acquistion & monitoring of the Dutec I/O Plexer and any ontrol systems' attached I/O modules.
Honeywell	C-Bus-utilizing SoftYon I/F	X	E01-0210-228	✓	✓	✓	Integrates Honeywell C-Bus Excel controllers into a Continuum System.
Honeywell	Excel 5000	X	E01-0210-157	✓	✓		Allows Honeywell system to monitor Andover objects using their PR – Bus protocol.
JEL	JEL Speak Control	X	E01-0210-132	✓	✓		Allows monitoring and change of points in various JEL outstations, connects to Site Commander.
Transmitton	Micropower MP100	X	E01-0210-155	✓	✓		Allows monitoring of all points and override of MP100 output points.
Transmitton	Microtel MT700/DiDos	X	E01-0210-156	✓	✓		Allows monitoring of all points and override of MT700/ DiDos output points.

CHILLERS

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Carrier	Dataport II	X	E01-0210-201	✓	✓		Interfaces to the Carrier System by means of a Carrier Dataport II CCN CIO (Communications Input/Output) Module. Allows monitoring of all Carrier chiller points.
Elm Refrigeration	Chilled/Frozen Food cabinets	X	E01-0210-144	✓	✓		CX sits directly on Elm network, monitoring and changing points as required.
McQuay (Snyder General)	Centrifugal/ Reciprocating/ Screw	X	E01-0210-182	✓	✓		Supports Open Protocol Data Communications V1.3 or Microtech Rooftop Open Protocol V1.4. Read/Write.
Trane	UCM/ RCM	X	E01-0210-118	✓	✓	✓	Uses Modbus RTU protocol, allows modify and poll of all chiller data.
Trane	Tracer Summit BCU	X	E01-0210-184	✓	✓		Uses BACnet PTP (RS232) protocol.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

Third Party Interfaces

FIRE SYSTEMS

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
ActionAir	LNS System	X	E01-0210-238			✓	The Actionair LNS System consists of a Panel PC, UPS and pre-loaded software. The system communicates with the smoke fire damper interfaces (SFDI) to provide intelligent control and monitoring of Actionair motorised dampers (Control modes).
Clymac	Ziton Fire Panel	X	E01-0210-223	✓	✓		Allows monitoring of Fire Panel data on a Ziton ZP3 fire System using XDriver points in Continuum. The XDriver may monitor Alarm, Fault, Enabled/Disabled conditions on individual Devices Zones or Loops in the Ziton Fire System.
Cerberus		X	E01-0210-231			✓	Provides a link between Continuum and a network of Cerberus fire panels, monitoring of a Cerberus fire alarm system from the Continuum front-end.
Edwards	Fast panel IRC-3	X	E01-0210-189	✓	✓		Requires CM1N control module with printer port.
Edwards	EST-3 Printer Protocol	X	E01-0210-221	✓	✓		Operates through the EST-3 printer interface to allow monitoring of Fire Panel. It allows the monitoring of detectors such as Alarms, Faults, Disablements and Enablements.
Gamewell	Series 600 Analog/ Addressable Fire Alarm Control Panel	X	E01-0210-193	✓	✓	✓	Allows remote acknowledgment, silence, and reset actions, as well as remote monitoring of alarm and fault conditions from the panel, its circuits, and devices. Supports both a single panel and networked panel.
Gent	3400 Panel	X	E01-0210-152	✓	✓		Uses both Plain English and XDriver filter to map all points from Fire Panel.
How/Face Macanda	Proton Panel	X	E01-0210-143	✓			Monitor only, will need modifications for Continuum as it contains data files.
Kentech	Kentech Synchro Panel	X	E01-0210-216	✓	✓		This enables a standalone Kentech panel, or network of panels to be integrated into Continuum, allowing fire and fault monitoring.
Protec	Algo-Tec, 6400MXL Series	X	E01-0210-222	✓	✓	✓	This XDriver may monitor alarm, fault, enable/disable conditions on individual zones or loops in the Protec Fire System. The latest version can link directly to the Pelco Endura XDriver for fast cause & effect actions.
Simplex	4020, 4100, 4120	X	E01-0210-186	✓	✓		Uses Simplex 4100 Computer Port Protocol-Format 1.
Simplex	4020, 4100, 4120 Series	X	E01-0210-184	✓	✓		Uses BACnet PTP/RS-232 to communicate through a Simplex BACpac Portal to communicate to the Simplex fire control panel. Read only.
Tyco	TycoMX	X	E01-0201-226	✓	✓	✓	Integrates Continuum with Tyco MX Fire Panels in a network environment and simulates a Fire Panel Node on the Tyco network. Changes in device or panel status are mapped across to the Netcontroller.
Vesda	Mini, ED-70, Scanner	X	E01-0210-118	✓	✓	✓	Uses Modbus interface to map all smoke Scanner detection system points.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

Third Party Interfaces

FUME HOOD CONTROLS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Phoenix Controls	Celeris system	X	E01-0210-197	✓	✓		Uses BACnet-over-Ethernet to communicate to a Celeris system through a Phoenix Accel-Way. Read/Write.
Tek Air	FVC-2000	X	E01-0210-140	✓	✓		Allows monitoring & control of Laboratory Fume hoods.

HEAT PUMPS/UNIT VENTILATORS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
McQuay (Snyder General)	Water Source Heat Pump	X	E01-0210-182	✓	✓		Supports Open Protocol Data Communications V1.3 or Microtech Rooftop Open Protocol V1.4. Read/ Write.

INTERCOM SYSTEMS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Alphacom	Alphacom 80 Exchange	X	E01-0210-122		✓	✓	Allows the monitoring of call log data on a Alphacom 80 Exchange System using XDriver points in Continuum, its display in a Continuum Event Viewer and the Continuum database.

LEAK DETECTION SYSTEMS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Veeder-Root	TSL300/ 350/350R	X	E01-0210-178	✓	✓	✓	Monitors system status, alarms tank levels, in-tank inventory, and system resets.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

LIGHTING CONTROLLERS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Gen- eration Continuum Compatible	Driver Description
Clipsal	5100PC 5500PC	X	E01-0210-230			✓	Allows connection to a Clipsal C-Bus lighting system via a serial RS-232 interface, enabling reading from and writing to points on the system and continuous notification of point status or value change.
Delmatic	ZMC Series	X	E01-0210-145	✓	✓		Programmes to control: Load Shedding, Emergency Test, Automatic Timing, Automatic Timing for staircases, Central Switching Control.
Dynalite	Fluorescent Bal- last Controller DTK925	X	E01-0210-176	✓	✓		Monitor and control lighting levels.

Third Party Interfaces

PACKAGE ENVIRONMENTAL UNITS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Liebert	SiteLink	X	E01-0210-118	✓	✓	✓	Uses Modbus RTU XDriver.

POWER MONITORING

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Cummins Diesel Generators	Power Command	X	E01-0210-195	✓	✓		Enables full control and monitoring of a Cummins Diesel Generator Set, including alarms.
Northern Design	Abacus II	X	E01-0210-146	✓			XDriver & Plain English code to monitor power readings. Plain English contains data files and is not Continuum-compatible.
Russ Electric	90-30	X	E01-0210-118	✓	✓	✓	Uses Modbus RTU Protocol to map data. Uses Standard SY/ MAX XDriver. Monitors power, voltages, currents, phase etc., on all circuits.
Square D	Power Logic Circuit Monitor	X	E01-0210-187	✓	✓		Uses Standard SY/ MAX XDriver. Monitors Circuit Monitor power, voltages, currents, phase etc., on all circuits.
Veris	Power Meters H8035, H8036	X	E01-0210-118	✓	✓	✓	Uses Modbus RTU XDriver.
Westinghouse/ Cutler Hammer	IMPACC IQ Meters	X	E01-0210-158	✓	✓		Allows monitoring and adjustment of all points.

PROGRAMMABLE LOGIC CONTROLLERS (PLCs)

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
J Bus Protocol	Various	X	E01-0210-118	✓	✓	✓	The J Bus protocol is a subset of the Modbus protocol, and so the Modbus XDriver is used for J Bus systems.
Modicon Modbus RTU Protocol	Various	X	E01-0210-118	✓	✓	✓	Commonly used protocol supported by many PLC and equipment manufacturers. Uses Poll on demand extraction of data. Most function codes are supported.
Modicon Modbus Protocol Asynchronous Version	Various	X	E01-0210-162	✓	✓		Polls & changes data asynchronously to the scan. Supports all functions as standard version above.
Square D	SY/MAX PLC's	X	E01-0210-187	✓	✓		Uses Standard SY/ MAX XDriver.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

Third Party Interfaces

PUMPS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Grundfoss	Genibus Pumps & Motors	X	E01-0210-172	✓	✓		Full control and monitoring of pumps and motors on RS-485 Genibus network.

SECURITY SYSTEMS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Guardall	PX, Windsor Panels	X	E01-0210-177	✓	✓		Set/unset areas, isolate/de-isolate and monitor alarm and tamper conditions for all detectors.
Honeywell/ Microtec	Galaxy	X	E01-0210-183	✓	✓	✓	Allows the User to set, unset, partset and reset groups, reset the panel, monitor conditions of circuits; and monitor, set, and alarm conditions of groups. The latest version can link directly to the Pelco Endura XDriver for fast cause & effect actions.
Scope Communica-tions	Scope RX 10 Intruder system	X	E01-0210-220	✓	✓		Provides a link between Continuum and the Scope RX10 programmable POCSAG receiver. This allows alarm data sent from an IRIS (Intelligent Radio Information System) to a Scope RX10 to be captured as alarms and events in Continuum.

SENSORS/METERS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Siko	AEA Linear Position Sensor	X	E01-0210-192	✓	✓		Part of a MAGLINE micro Linear Positioning System. Has an MSA Sensor to sense the position along a magnetically-encoded measuring strip.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

TELEPHONE SWITCHES/SYSTEMS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
AT&T	TBOS	X	E01-0210-188	✓	✓		Supports TBOS Protocol.

UPS SYSTEMS

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
MGE UPS	Comet UPS	X	E01-0210-118	✓	✓	✓	Modbus RTU is used to extract data from the MGE units. Note: The Comet UPS actually uses JBUS which is a smaller set of Modbus RTU commands.

Third Party Interfaces

VARIABLE SPEED DRIVES

Manufacturer	Equipment* Descrip./Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
ABB	ACH500	X	E01-0210-118	✓	✓	✓	Uses Modbus RTU protocol to extract data from individual drives.
Danfoss	VLT3000 Series	X	E01-0210-131	✓	✓		Gives full control & monitoring of all drive parameters.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

VIDEO SWITCHES

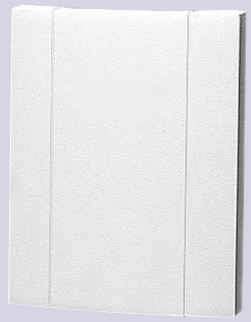
Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Gen-eration Continuum Compatible	Driver Description
Comerson	Comerson Digital System	X	E01-0210-240			✓	The Comerson XDriver allows a Continuum 2nd generation controller to send Net Alarms to a Comerson Digital CCTV System (CDS).
Pelco	Endura	X	E01-0210-235			✓	This Pelco Endura Matrix Switch XDriver allows building alarms and events in the field to switch cameras to presets and monitors. Cause & effect scenarios can be configured in Continuum between Continuum, 3rd party devices and Pelco Endura. Continuum Graphics can also be used to switch cameras to different presets and display on external monitors.

MISCELLANEOUS DRIVERS

Manufacturer	Equipment* Descrip./ Model	Driver Type	TAC File Reference Number*	Infinity Compatible	1st Generation Continuum Compatible	2nd Generation Continuum Compatible	Driver Description
Oregon Scientific Weather Station	Weather Station	X	E01-0210-237			✓	The Oregon Weather station XDriver allows complete weather monitoring. The system comprises many indoor and outdoor wireless sensors.
Traffic Management Systems	TMS Scada	X	E01-0120-168	✓	✓		Monitors traffic sign data and alarms.

* These options are available to download from TAC ExchangeOnline if the appropriate XDriver comm port has been enabled.

Field Devices



Wall Mount Sensor

TAC's wall mount temperature sensors provide accurate, reliable measurement of interior space temperature. The thermistor is encapsulated with a low mass, high-conductivity thermal compound for good heat transfer characteristics. It is housed in an attractive, well-ventilated plastic enclosure. The unique two-piece design permits changeout of the thermistor material, which is located in the cover, without rewiring or removal of the baseplate. The cover is securely attached to the backplate via two allen screws.

The sensor is for interior use only and is not suitable for use where condensation may occur. Off-white finish with terminal strip connection.

Operating Range:	0°C to +40°C 10-95% RH (non-condensing)
Accuracy:	+/- 0.2 °C for 5 years minimum
Wire Specifications:	0.2, 0.3, 0.5, 0.8mm2, 2 conductor, unshielded
Dimensions:	115mm(H) x 89mm(W) x 20mm(D)

Wall mount sensor with TAC logo	**TTS-S-1**
Wall mount sensor without TAC logo	**TTS-S-B-1**

Sensor Plus

The Sensor Plus combines the accuracy and reliability of the Wall Mount Sensor with an additional setpoint adjustment slider control, an override pushbutton and a programmable LED indicator.

The Sensor Plus utilises an attractive, well-ventilated plastic enclosure and the housing is securely attached to the backplate via two allen screws. The sensor is for interior use only, and is not suitable for use where condensation may occur. Models include a connection for the RoamIO$_2$ Tool. Off-white finish with terminal strip connection.

Operating Range:	0°C to +40°C 10-95% RH (non-condensing)
Accuracy:	+/- 0.2 °C for 5 years minimum
Wire Specifications:	0.2, 0.3, 0.5, 0.8mm2, 5 conductor, unshielded
Slider Range:	200 to 2,000 ohms, +/- 20%
LED:	0-5VDC @ 7mA
Dimensions:	115mm(H) x 89mm(W) x 28mm(D)

Sensor plus with logo	**TTS-SE-1**
Sensor plus without logo	**TTS-SE-B-1**

Smart Sensor

The TAC Smart Sensor combines an attractive display with a room temperature sensor to provide users with a cost effective way to view or modify local terminal unit operation. It is designed for use with I2 controllers and can also accomplish many local control and monitoring tasks.

The standard sensor provides a two-character LED display and a 6 button programmable keypad that enables operators and occupants to change setpoints, monitor occupancy status and turn equipment on and off. An enhanced version is also available with a 4-digit custom LCD that provides the following icons: %, Setpoint, Cool, Heat, Fan, OA, and SP.

The function keys can be custom programmed to perform a wide variety of functions, including switching a specific zone to occupied mode, signalling an alarm condition, adjusting the amount of override time, arming or disarming a security system, and enforcing password security. Programming the display and function keys is done with TAC's Plain English programming language. Both versions of the Smart Sensor provide a connection for the RoamIO$_2$.

Operating Range:	0°C to +40°C 10-95% RH (non-condensing)
Wire Specifications:	0.2, 0.3, 0.5 or 0.8mm 2, 3 conductor, unshielded wire
Slider Range:	200 to 10,200 ohms, +/- 0.2%
LED:	0-5VDC @ 7mA
Accuracy:	+/-2°C for a minimum of 5 years
Dimensions:	115mm(H) x 89mm(W) x 27mm(D)

Smart Sensor with LED display and TAC logo	**TTS-SD-LED-1**
Smart Sensor with LCD display and TAC logo	**TTS-SD-LCD-1**
Smart Sensor with LED display, no logo	**TTS-SD-LED-B-1**
Smart Sensor with LCD display, no logo	**TTS-SD-LCD-B-1**
Buffer Board for Smart Sensor LED and LCD	**TTS-SD-INFBUF**

Infistat Display Interface

The Infistat Display Module provides a convenient, programmable interface to your building management system. Provides authorised operators quick and easy access to HVAC or security information and enables them to adjust personal comfort levels with little or no training. The Infistat can co-exist with other Continuum I/O modules, such as the UI-8-10, DI-8, AO-4-8 etc. (up to 32 modules per single NetController).

- *Provides convenient access to Continuum building management systems*
- *Can be mounted remotely and powered from an external 24VAC power source*
- *Measures local temperature using a thermistor*
- *Includes a 2 line, 16-character LCD display with an audible beeper*
- *12 button, ergonomically designed programmable keypad with flip down cover, using Plain English script*
- *Cost-effective, compact and attractive; Infistat blends into the decor of any facility*
- *Wall-mountable and for indoor use only; Panel and DIN Rail Mounting Kits are available separately*

Operating Range:	+10°C to +38°C 10-95% RH (non-condensing)
Input Temperature Range:	+10°C to +38°C 10-95% RH (non-condensing)
Input Temperature Accuracy:	+/- 0.9°C
Sensing Element:	Type III Thermistor, 10k ohms @ 25°C
Dimensions:	185mm (H) x 177mm (W) x 38mm (D)

ACC LON Model (RS-485)	**ISTAT-A-4**
ACC LON Model (FTT)	**ISTAT-A-F**
Panel Mounting Kit	**ISTAT-FM-KIT**

LD-1 Local Display Module

The LD-1 Local Display Module provides a convenient, programmable interface to your facility automation system. Enables authorised people to easily arm or disarm a security zone, quickly view HVAC or security information and/or adjust personal comfort levels. The LD-1 can co-exist with other Continuum I/O modules, such as UI-8-10, DI-8, AO-4-8 etc. (up to 32 modules per single NetController).

- *4 Line, 16 character backlit LCD display*
- *Audible beeper output*
- *19 Button ergonomically designed keypad*
- *Keys can be custom programmed using Plain English script*
- *Cost effective and compact in size*
- *Suitable for fascia panel mounting or directly on the wall*
- *Intended for indoor use only*
- *FTT and RS485 models available*
- *CE approved*

Power:	12-24VDC @ 3.0W max.
Operating Range:	0°C to +49°C 10-95% RH (non-condensing)
Dimensions:	118mm(H) x 153mm(W) x 38mm(D)

ACC LON Model (RS-485)	**LD-1**
ACC LON Model (FTT)	**LD-1-FT**

HVAC and Other Field Devices

The temperature control sensors featured on the previous pages of this catalogue are specific to Andover Continuum. In addition, TAC's Field Device Product Division offers a comprehensive portfolio of field devices to meet all our customers' needs.

For further details, contact your local TAC sales office, or download the current set of Field Device Catalogues from our website: **www.tac.com**

Andover Continuum Software and Firmware Compatibility Matrix

Versions 1.7 through 1.81

Note: ALL Andover Continuum workstations and web.Client Application Servers must be at the exact same software rev.

Last Updated: June 15, 2007

		CyberStation/web.Client Software Version					
		1.7	1.71	1.73	1.74	1.8	1.81
LAN Configuration	DB Server OS	Win2000 Server (up to SP4), Win Server 2003 (up to SP1)			Win2000 Svr (SP4), Win Svr 2003 (SP1), Win Svr 2003 R2		Win2000 Svr (SP4), Win Svr 2003 (SP2),Win Svr 2003 R2 (SP2)
	SQL Version	MS SQL 2000[1] (up to SP4) Standard & Enterprise Editions			MS SQL 2000 (up to SP4), MS SQL 2005 (SP2) Standard & Enterprise Editions		
	CyberStation PC OS	Win2000 Pro (up to SP4), Win XP Pro (up to SP2) .NET Framework v1.1[2]			Win2000 Pro (SP4), Win Svr 2000 (SP4), Win XP Pro (SP2), Win Svr 2003 (SP1), Win Svr 2003 R2 .NET Framework v2.0		Win2000 Pro (SP4)[7], Win2000 Svr (SP4)[7], Win XP Pro (SP2), Win Svr 2003 (SP2), Win Svr 2003 R2 (SP2) .NET v2.0 & .NET v3.0 (Video Only)
	web.Client Server OS	Win2000 Pro (up to SP4), Win XP Pro (up to SP2) (both up to 2 connections) Win2000 Server (up to SP4), Win Server 2003 (up to SP1) (both up to 25 connections) .NET Framework v1.1[2]			Win2000 Pro (SP4), Win XP Pro (SP2) (both up to 2 connections) Win2000 Svr (SP4), WinSvr 2003 (SP1), Win Svr 2003 R2 (both up to 25 connections) .NET Framework v2.0		Win2000 Pro (SP4)[7], Win XP Pro (SP2) (both up to 2 connections) Win2000 Svr (SP4)[7], WinSvr 2003 (SP2), Win Svr 2003 R2 (SP2) (both up to 25 connections) .NET v2.0 & .NET v3.0 (Video Only)
Single User Configuration	SQL Version	MSDE 2000 (up to SP4)					
	CyberStation SU (Cyber / DB Server OS)	Win2000 Pro (up to SP4), Win XP Pro (up to SP2) .NET Framework v1.1[2]			Win2000 Pro (SP4), Win Svr 2000 (SP4), Win XP Pro (SP2), Win Svr 2003 (SP1), Win Svr 2003 R2 .NET Framework v2.0		Win2000 Pro (SP4)[7], Win2000 Svr (SP4)[7], Win XP Pro (SP2), Win Svr 2003 (SP2), Win Svr 2003 R2 (SP2) .NET v2.0 & .NET v3.0 (Video Only)
	web.Client SU (CyberStation, web.Client Server, & DB Server OS)	Win2000 Pro (up to SP4), Win XP Pro (up to SP2), Win2000 Svr (up to SP4), Win Svr 2003 (all up to 2 connections) .NET Framework v1.1[2]			Win2000 Pro (SP4), Win2000 Svr (SP4), Win XP Pro (SP2), Win Svr 2003 (SP1), Win Svr 2003 R2 (all up to 2 connections) .NET Framework v2.0		Win2000 Pro (SP4)[7], Win2000 Svr (SP4)[7], Win XP Pro (SP2), Win Svr 2003 (SP2), Win Svr 2003 R2 (SP2) (all up to 2 connections) .NET v2.0 & .NET 3.0 (Video Only)
	web.Client: Browser PC OS	Win NT 4.0, Win2000 Pro, Win2000 Svr, Win XP Pro, Win Svr 2003 .NET Framework v1.1[2]			Win2000 Pro (SP4), Win2000 Svr (SP4), Win XP Pro (SP2), Win Svr 2003 (SP1), Win Svr 2003 R2 .NET Framework v2.0		Win2000 Pro (SP4)[7], Win2000 Svr (SP4)[7], Win XP Pro (SP2), Win Svr 2003 (SP2), Win Svr 2003 R2 (SP2) .NET v2.0 & .NET v3.0 (Video Only)
	web.Client: Browser[2]	MS IE 6.0 SP1				MS IE 6.0 SP1, MS IE 7.0	

	Compatible Firmware Versions						
NetController II						2.0	
ACX Series (5720/5740)						1.0	
CX Controllers	1.5x						
CX 9702	1.x						
bCX1-CR-INF (Infinet)	1.0, 1.1[3]			1.0, 1.1, 1.2[4]			
i2 Controllers (Infinet)	3.x (3.3 to use xPUI4 Expansion module)						
Exceptions:							
i2608, i2624, i2804, i2814, i2885, i2887	3.x						
i2865-V, i2866-V, i2885-V	3.5						
i2 Controllers-WL (Wireless Only Infinet)	N/A			3.5			
Infinet Controllers	1.4 or greater						
Exceptions:							
ACX 700	1.5x						
ACX 780	1.5x						
DCX 250	2.16						
LSX 280	Not supported.						
bCX1-R, bCX1-CR (BACnet)	4.3			4.3, 4.4, 4.5[5]			
b4920	4.2						
b3 Controllers (BACnet)	4.3			4.3, 4.4, 4.5			
Exceptions:							
b3865-V, b3866-V, b3885-V	4.5[6]			4.5			
b3 Controllers-WL (Wireless Only BACnet)	N/A			4.5			

1 MS SQL 2000 Standard and Enterprise (English) Editions supported. SQL Server 2000 Personal Edition is not supported. Please use MSDE 2000 for standalone installations.
2 .NET Framework 2.0 is not supported.
3 Requires CyberStation/web.Client 1.73 to use firmware's new features.
4 v1.2 required on bCX1-CR-INF to set comm. port for Wireless.
5 v4.5 required on bCX1-R/bCX1-CR to set comm. port for Wireless.
6 BACnet schedules are not compatible for versions below v1.73; only Infinity schedules are supported.
7 v1.81 Video Features are not supported on Win2000 Pro or Win2000 Svr.

Note: Only the bCX1 supports xPBA4 and xPBD4 Expansion Modules. For xPUI4 support, i2 controllers must be at version 3.3 firmware and b3 controllers must be at least at version 4.3 firmware.

The information on this chart is furnished for informational purposes only, is subject to change without notice, and should not be construed as a commitment by TAC.

Andover Continuum Software and Firmware Compatibility Matrix

Versions 1.4 through 1.62

Note: ALL Andover Continuum workstations and web.Client Application Servers must be at the exact same software rev.

	Last Updated: June 15, 2007	CyberStation/web.Client Software Version						
		1.4	1.5	1.51	1.52	1.53	1.6	1.62
LAN Configuration	DB Server OS	Win NT 4.0 Server SP6a, Win2000 Server					Win NT 4.0 Server SP6a, Win2000 Server (up to SP4)	
	SQL Version	MS SQL 7.0	MS SQL 7.0 (Up to SP4), MS SQL 2000[1] Standard & Enterprise Editions				MS SQL 7.0 SP4, MS SQL 2000[1] Standard & Enterprise Editions	
	CyberStation PC OS	Win NT 4.0 SP6a, Win2000 Pro SP1	Win NT 4.0 Workstation SP6a, Win2000 Pro SP2				Win2000 Pro (up to SP4), Win XP Pro (up to SP2)	
	web.Client Server OS	Win NT 4.0 SP6a (up to 25 connections), Win2000 Pro SP1 (up to 2 Users), Win2000 Server (up to 25 connections)					Win2000 Pro (up to SP4), Win XP Pro (up to SP2) (both up to 2 connections) Win2000 Server (up to SP4) (up to 25 connections)	
Single User Configuration	SQL Version	MSDE 1.0	MSDE 1.0 (Up to SP4), MSDE 2000 (Note: MSDE 2000 must be installed manually)				MSDE 1.0 SP4, MSDE 2000 (Note: MSDE 2000 must be installed manually)	
	CyberStation SU (Cyber / DB Server OS)	Win NT 4.0 SP6a, Win2000 Pro SP1	Win NT 4.0 Workstation SP6a, Win2000 Pro SP2				Win2000 Pro (up to SP4), Win XP Pro (up to SP2)	
	web.Client SU (CyberStation, web.Client Server, & DB Server OS)	Win NT 4.0 SP6a, Win2000 Pro SP1 (both up to 2 connections)	Win NT 4.0 Workstation SP6a, Win2000 Pro SP3 (both up to 2 connections)				Win2000 Pro (up to SP4), Win XP Pro (up to SP2), Win2000 Server (up to SP4) (all up to 2 connections)	
	web.Client: Browser PC OS	Win NT 4.0, Win98 SE, Win2000, Win XP Pro, Win Server 2003					Win NT 4.0, Win98 SE, Win2000, Win XP Pro, Win Server 2003 .NET Framework v1.1[2]	
	web.Client: Browser[2]	MS IE 5.0			MS IE 5.01		MS IE 6.0	MS IE 6.0 SP1
		Compatible Firmware Versions						
	NetController II	N/A						
	ACX Series (5720/5740)	N/A						
	CX Controllers	1.4	1.5x					
	CX 9702	N/A				1.x		
	bCX1-CR-INF (Infinet)	N/A						
	i2 Controllers (Infinet)	3.x (No save to flash.)						
	Exceptions:							
	i2608, i2624, i2804, i2814, i2885	N/A	3.x					
	i2887	N/A					3.x	
	i2865-V, i2866-V	3.5						
	i2885-V		3.5					
	i2 Controllers-WL (Wireless Only Infinet)	N/A						
	Infinet Controllers	1.4 or greater						
	Exceptions:							
	ACX 700	1.4x	1.5x					
	ACX 780	1.4x	1.5x					
	DCX 250	2.16						
	LSX 280	Not supported.						
	bCX1-R, bCX1-CR (BACnet)	N/A						
	b4920	N/A					4.0, 4.1	4.1
	b3 Controllers (BACnet)	N/A					4.0, 4.1	4.1
	Exceptions:							
	b3865-V, b3866-V, b3885-V						4.5[6]	
	b3 Controllers-WL (Wireless Only BACnet)	N/A						

1 MS SQL 2000 Standard and Enterprise (English) Editions supported. SQL Server 2000 Personal Edition is not supported. Please use MSDE 2000 for standalone installations.
2 .NET Framework 2.0 is not supported.
3 Requires CyberStation/web.Client 1.73 to use firmware's new features.
4 v1.2 required on bCX1-CR-INF to set comm. port for Wireless.
5 v4.5 required on bCX1-R/bCX1-CR to set comm. port for Wireless.
6 BACnet schedules are not compatible for versions below v1.73; only Infinity schedules are supported.
7 v1.81 Video Features are not supported on Win2000 Pro or Win2000 Svr.

Note: Only the bCX1 supports xPBA4 and xPBD4 Expansion Modules. For xPUI4 support, i2 controllers must be at version 3.3 firmware and b3 controllers must be at least at version 4.3 firmware.

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Notes

Notes

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